United States Department of Agriculture

Dietary Patterns during Pregnancy and Gestational Weight Gain: A Systematic Review

2020 Dietary Guidelines Advisory Committee, Pregnancy and Lactation Subcommittee

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Nutrition Evidence Systematic Review

Center for Nutrition Policy and Promotion

Food and Nutrition Service

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This systematic review was conducted by the 2020 Dietary Guidelines Advisory Committee in collaboration with the Nutrition Evidence Systematic Review (NESR) team at the Center for Nutrition Policy and Promotion, Food and Nutrition Service, U.S. Department of Agriculture (USDA). All systematic reviews from the 2020 Advisory Committee Project are available on the NESR website: https://nesr.usda.gov/2020-dietary-guidelines-advisory-committee-systematic-reviews.

Conclusion statements drawn as part of this systematic review describe the state of science related to the specific question examined. Conclusion statements do not draw implications, and should not be interpreted as dietary guidance. This portfolio provides the complete documentation for this systematic review. A summary of this review is included in the 2020 Advisory Committee's Scientific Report available at www.DietaryGuidelines.gov.

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USDA and HHS implemented a process to identify topics and scientific questions to be examined by the 2020 Dietary Guidelines Advisory Committee. The Committee conducted its review of evidence in subcommittees for discussion by the full Committee during its public meetings. The role of the Committee members involved establishing all aspects of the protocol, which presented the plan for how they would examine the scientific evidence, including the inclusion and exclusion criteria;

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[i] Under contract with the Food and Nutrition Service, United States Department of Agriculture.

reviewing all studies that met the criteria they set; deliberating on the body of evidence for each question; and writing and grading the conclusion statements to be included in the scientific report the 2020 Committee submitted to USDA and HHS. The NESR team with assistance from Federal Liaisons and Project Leadership, supported the Committee by facilitating, executing, and documenting the work necessary to ensure the reviews were completed in accordance with NESR methodology. More information about the 2020 Dietary Guidelines Advisory Committee, including the process used to identify topics and questions, can be found at www.DietaryGuidelines.gov. More information about NESR can be found at NESR.usda.gov.

The Committee and NESR staff thank USDA's Agricultural Research Service for coordinating the peer review of this systematic review, and the Federal scientist peer reviewers for their time and expertise.

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INTRODUCTION

This document describes a systematic review conducted to answer the following question: What is the relationship between dietary patterns consumed during pregnancy and gestational weight gain? This systematic review was conducted by the 2020 Dietary Guidelines Advisory Committee, supported by USDA's Nutrition Evidence Systematic Review (NESR).

More information about the 2020 Dietary Guidelines Advisory Committee is available at the following website: www.DietaryGuidelines.gov.

NESR specializes in conducting food- and nutrition-related systematic reviews using a rigorous, protocol-driven methodology. More information about NESR is available at the following website: NESR.usda.gov.

NESR's systematic review methodology involves developing a protocol, searching for and selecting studies, extracting data from and assessing the risk of bias of each included study, synthesizing the evidence, developing conclusion statements, grading the evidence underlying the conclusion statements, and recommending future research. A detailed description of the systematic reviews conducted for the 2020 Dietary Guidelines Advisory Committee, including information about methodology, is available on the NESR website: https://nesr.usda.gov/2020-dietary-guidelines-advisory-committee-systematic-reviews. In addition, starting on page 95, this document describes the final protocol as it was applied in the systematic review. A description of and rationale for modifications made to the protocol are described in the 2020 Dietary Guidelines Advisory Committee Report, Part D: Chapter 2. Food, Beverage, and Nutrient Consumption During Pregnancy.

List of abbreviations

Abbreviation	Full name
AHEI	Alternative Healthy Eating Index
AMDR	Acceptable Macronutrient Distribution Range
DASH	Dietary Approaches to Stop Hypertension
DII	Dietary Inflammatory Index
DP	Dietary pattern
EVOO	Extra virgin olive oil
FFQ	Food frequency questionnaire
GDM	Gestational diabetes mellitus
GWG	Gestational weight gain
HDI	Human Development Index
HEI	Healthy Eating Index
HFII	Healthy Food Intake Index
HHS	Department of Health and Human Services
IOM	Institute of Medicine
MDA	Mediterranean Diet Adherence
MDQS	Maternal Diet Quality Score
MED	Mediterranean
NESR	Nutrition Evidence Systematic Review
NFFD	Norwegian Fit for Delivery Diet
NND	New Nordic Diet
PCA	Principal component analysis
PPWL	Postpartum weight loss
PUFA	Polyunsaturated fatty acid
RCT	Randomized controlled trial
rMED	Relative Mediterranean Diet

Abbreviation	Full name
RoB	Risk of bias
SES	Socioeconomic status
USDA	United States Department of Agriculture

WHAT IS THE RELATIONSHIP BETWEEN DIETARY PATTERNS CONSUMED DURING PREGNANCY AND GESTATIONAL WEIGHT GAIN?

PLAIN LANGUAGE SUMMARY

What is the question?

- The question is: What is the relationship between dietary patterns consumed during pregnancy and gestational weight gain?

What is the answer to the question?

- Limited evidence suggests that certain dietary patterns during pregnancy are associated with a lower risk of excessive gestational weight gain during pregnancy. These patterns are higher in vegetables, fruits, nuts, legumes, fish, and lower in added sugar, and red and processed meat.

Why was this question asked?

- This important public health question was identified by the U.S. Departments of Agriculture (USDA) and Health and Human Services (HHS) to be examined by the 2020 Dietary Guidelines Advisory Committee.

How was this question answered?

- The 2020 Dietary Guidelines Advisory Committee, Pregnancy and Lactation Subcommittee conducted a systematic review to answer this question with support from the Nutrition Evidence Systematic Review (NESR) team.
- Dietary patterns were defined as the quantities, proportions, variety, or combination of different foods, drinks, and nutrients (when available) in diets, and the frequency with which they are habitually consumed.
- Diets based on macronutrient distribution were examined when at least one macronutrient proportion was outside of the acceptable macronutrient distribution range (AMDR) for carbohydrate, fat, and/or protein, whether or not the foods/food groups consumed were provided.

What is the population of interest?

- The population of interest is generally healthy, pregnant women.

What evidence was found?

- This review includes 26 articles published between 2009 and 2019.
- Many studies showed that “beneficial” dietary patterns were related to less weight gain during pregnancy.
- Dietary patterns that were consistently related to less weight gain during pregnancy were:
    - higher in vegetables, fruits, nuts, legumes, fish, and
    - lower in added sugar, red and processed meat.
- The body of evidence is limited in several ways:
    - Studies were mostly observational and cause-effect relationships between diet and weight gain during pregnancy were therefore difficult to determine.

    - There was little racial/ethnic, socioeconomic, and age diversity in these studies.
    - It was difficult to compare studies due to inconsistencies in how diets were measured.
    - There were concerns about potential bias of the studies.
    - Many studies were not designed to study the relationship between dietary patterns and weight gain during pregnancy.

How up-to-date is this systematic review?

- This review searched for studies from January 2000 to November 2019.

TECHNICAL ABSTRACT

Background

- This important public health question was identified by the U.S. Departments of Agriculture (USDA) and Health and Human Services (HHS) to be examined by the 2020 Dietary Guidelines Advisory Committee.
- The 2020 Dietary Guidelines Advisory Committee, Pregnancy and Lactation Subcommittee conducted a systematic review to answer this question with support from the Nutrition Evidence Systematic Review (NESR) team.
- The goal of this systematic review was to examine the following question: What is the relationship between dietary patterns consumed during pregnancy and gestational weight gain?

Conclusion statement and grade

- Limited evidence suggests that certain dietary patterns during pregnancy are associated with a lower risk of excessive gestational weight gain during pregnancy. These patterns are higher in vegetables, fruits, nuts, legumes, fish, and lower in added sugar, and red and processed meat. (Grade: Limited)

Methods

- A literature search was conducted using four databases (PubMed, Cochrane, Embase, and CINAHL) to identify articles that evaluated the intervention/exposure of dietary patterns during pregnancy and the outcome of gestational weight gain. A manual search was conducted to identify articles that may not have been included in the electronic databases searched. Articles were screened by two NESR analysts independently for inclusion based on pre-determined criteria.
- Data extraction and risk of bias assessment were conducted for each included study, and both were checked for accuracy. The Committee qualitatively synthesized the body of evidence to inform development of a conclusion statement(s), and graded the strength of evidence using pre-established criteria for risk of bias, consistency, directness, precision, and generalizability.

Summary of the evidence

- This systematic review includes 26 articles, including five from four randomized controlled trials (RCTs) and 21 from 19 prospective cohort studies published between 2009 and 2019.
- Articles included in this review assessed one of the following interventions/exposures during pregnancy:
    - Dietary patterns (DPs) (24 studies).
    - Diets based on macronutrient distributions outside of the acceptable macronutrient distribution range (AMDR) (2 studies).
- Eight of the 15 articles that assessed maternal DPs using an index/score method showed an association with gestational weight gain (GWG).
    - Five of the eight articles showed that greater adherence to a DP (identified as beneficial by the study) was associated with lower GWG.
    - Three articles showed that greater adherence to a DP (identified as

    beneficial by the study) was associated with greater GWG in all participants or only women with obesity.

- Four of the five articles that assessed maternal DPs using a factor or cluster analysis showed one or more associations between adherence to DPs and GWG.
    - One article showed that greater adherence to a DP (identified as beneficial by the study) was associated with lower GWG.
    - Four articles showed that greater adherence to a DP (identified as detrimental by the study) was associated with higher GWG.
- One study that assessed maternal DPs using reduced rank regression showed that greater adherence to a DP was associated with higher GWG.
- Two RCTs showed that participants randomized to a DP (identified as beneficial by the study) had lower GWG.
- One RCT and one prospective cohort study showed no association between maternal consumption of a diet higher in fat (i.e. >35 percent of total energy from fat, which is greater than the AMDR) and GWG.
- Although the DPs examined were characterized by combinations of different foods and beverages, the patterns that were consistently shown to be associated with lower risk of excessive GWG were: higher in vegetables, fruits, nuts, legumes, and fish and lower in added sugar and red and processed meat.
    - Not all foods were part of the same DP. The evidence did not show a consistent association between grains or dairy and GWG.
- The ability to draw strong conclusions was limited by the following issues:
    - There were few RCTs and thus data were primarily observational in nature, limiting the ability to determine causal effects of DPs on GWG.
    - Key confounders were not consistently controlled for in most of the studies.
    - Studies had risk-of-bias issues, including exposure misclassification, self-reported outcomes, and selection bias.
    - Most of the studies were not designed to assess the association between DPs and GWG.
    - People with lower SES, adolescents, and racially and ethnically diverse populations were underrepresented in the body of evidence.

FULL REVIEW

Systematic review question

What is the relationship between dietary patterns consumed during pregnancy and gestational weight gain?

Conclusion statement and grade

Limited evidence suggests that certain dietary patterns during pregnancy are associated with a lower risk of excessive gestational weight gain during pregnancy. These patterns are higher in vegetables, fruits, nuts, legumes, fish, and lower in added sugar, and red and processed meat. (Grade: Limited)

Summary of the evidence

- This systematic review includes 26 articles,[1-26] including five articles from four randomized controlled trials (RCTs) and 21 articles from 19 prospective cohort studies published between 2009 and 2019.
- Articles included in this review assessed one of the following interventions/exposures during pregnancy:
  - Dietary patterns (DP) (24 studies).
  - Diets based on macronutrient distributions outside of the acceptable macronutrient distribution range (AMDR) (2 studies).
- Eight of the 15 articles that assessed maternal DPs using an index/score method showed an association with gestational weight gain (GWG):
  - Five of the eight articles showed that greater adherence to a DP (identified as beneficial by the study) was associated with lower GWG.
  - Three articles showed that greater adherence to a DP (identified as beneficial by the study) was associated with greater GWG in all participants or only women with obesity.
- Four of the five articles that assessed maternal DPs using a factor or cluster analysis showed one or more associations between adherence to DPs and GWG.
  - One article showed that greater adherence to a DP (identified as beneficial by the study) was associated with lower GWG.
  - Four articles showed that greater adherence to a DP (identified as detrimental by the study) was associated with higher GWG.
- One study that assessed maternal DPs using reduced rank regression showed that greater adherence to a DP was associated with higher GWG.
- Two RCTs showed that participants randomized to a DP (identified as beneficial by the study) had lower GWG
- One RCT and one prospective cohort study showed no association between maternal consumption of a diet higher in fat (i.e., >35 percent of total energy from fat, which is greater than the AMDR) and GWG
- Although the DPs examined were characterized by combinations of different foods and beverages, the patterns that were consistently shown to be associated with lower risk of excessive GWG were: higher in vegetables, fruits, nuts, legumes, and fish and lower in added sugar and red and processed meat.
  - Not all foods were part of the same DP. The evidence did not show a

consistent association between grains or dairy and GWG.

- The ability to draw strong conclusions was limited by the following issues:
    - There were few RCTs and thus data were primarily observational in nature, limiting the ability to determine causal effects of DPs on GWG.
    - Key confounders were not consistently controlled for in most of the studies.
    - Studies had risk-of-bias issues, including exposure misclassification, self-reported outcomes, and selection bias.
    - Most of the studies were not designed to assess the association between DPs and GWG.
    - People with lower SES, adolescents, and racially and ethnically diverse populations were underrepresented in the body of evidence.

Description of the evidence

This systematic review included articles that address the relationship between dietary patterns and/or diets based on macronutrient distributions outside of the AMDR during pregnancy and gestational weight gain (GWG). The search included articles from high and very high Human Development Index[ii] countries and the search time frame spanned between January 2000 and November 2019. Studies considered in this body of evidence included pregnant women who were generally healthy. The following study designs were included: randomized controlled trials (RCTs), non-randomized controlled trials, prospective and retrospective cohort studies, and nested case-control studies.

This body of evidence includes 26 articles, including five from four RCTs[22-26] and 21 from 19 prospective cohort studies.[1-21] A total of 23 distinct trials/cohort studies are represented in this body of evidence. References are included for each study in Table 1 with trial/cohort names or locations when names were unavailable. Six studies were conducted in the U.S.[6,7,9,11-13,16,25] In addition, three studies were conducted in Spain,[1,2,23,26] two each in the U.K.,[22,24] Norway,[5,21] and Japan[3,4]; and one each in Mexico,[18] Italy,[19] Poland,[17] Iceland,[14] Finland,[10] the Netherlands,[8] China,[15] and Malaysia.[20]

[ii] The Human Development classification was based on the Human Development Index (HDI) ranking from the year the study intervention occurred or data were collected (UN Development Program. HDI 1990-2017 HDRO calculations based on data from UNDESA (2017a), UNESCO Institute for Statistics (2018), United Nations Statistics Division (2018b), World Bank (2018b), Barro and Lee (2016) and IMF (2018). Available from: http://hdr.undp.org/en/data). If the study did not report the year in which the intervention occurred or data were collected, the HDI classification for the year of publication was applied. HDI values are available from 1980, and then from 1990 to present. If a study was conducted prior to 1990, the HDI classification from 1990 was applied. When a country was not included in the HDI ranking, the current country classification from the World Bank was used instead (The World Bank. World Bank country and lending groups. Available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world- country-and-lending-groups).

Table 1. Included trials and cohorts

Trial/Cohort name	Reference number(s)
Randomized Controlled Trials	
Effect of Simple, Targeted Diet in Pregnant Women With Metabolic Risk Factors on Pregnancy Outcomes (ESTEEM) trial	22
St. Carlos GDM prevention study	23,26
Maternal Offspring Metabolics Family Intervention Trial (MOMFIT)	25
U.K. Pregnancies Better Eating and Activity Trial (UPBEAT)	24
Prospective Cohort Studies	
Mamma & Bambino	19
Osaka Maternal and Child Health Study (OMCHS)	3
Generation R Study	8
Born in Guangzhou Cohort Study (BIGCS)	15
Polish Mother and Child Cohort	17
Pregnancy Research on Inflammation, Nutrition and City Environments: Systematic Analyses (PRINCESA)	18
New Hampshire Birth Cohort Study (NHBCS)	13
INfancia y Medio Ambiente (INMA)	1
Project Viva	6,9,12
Mérida Cohort	2
Norwegian Fit for Delivery (NFFD)	21
Norwegian Mother and Child Cohort Study (MoBa)	5
PREgnant Women of Iceland (PREWICE)	14
Control arm of RADIEL trial	10
Infant Feeding Practices Study II (IFPSII)	7
Seremben Cohort Study (SECOST)	20
Pregnancy Environment and Lifestyle Study (PETALS)	16
Healthy Start	11

Trial/Cohort name	Reference number(s)
Tokyo (Japan)	4

Subject characteristics:

- Sample sizes of the studies ranged from 35[2] to 66,597[5] participants.
- Almost all of the studies were conducted in adult women (18-45 y) who had singleton pregnancies. Of note, Fulay et al[12] and Wedolowska et al[17] enrolled mothers as young as 15 y and 17 y, respectively.
- Health characteristics:
    - Prepregnancy BMI: Seven studies enrolled predominantly or exclusively overweight or obese women.[7,10,11,16,18,24,25] In addition, Al Wattar et al enrolled women with metabolic risk factors, including women with obesity.[22]
    - Diabetes: 10 studies excluded women with a previous diagnosis of type 1 and/or 2 diabetes mellitus (as defined by the studies).[5,9-12,16,17,19,21,22,25] Two studies excluded women with one or more of the following conditions: gestational diabetes, hypertension, and preeclampsia.[18,19] In an RCT conducted in Spain, the authors noted that approximately 25 percent of the participants had a family history of type 2 diabetes mellitus.[23,26]
- Race/ethnicity: Thirteen of the 26 articles noted that the participants were predominantly or exclusively White (defined as ≥50 percent of the participants).[2,6-9,11-13,21,23-26] Nine studies did not report race/ethnicity.[1,3,5,10,14,15,17-19] Yong et al[20] reported that 89 percent of the participants were Malay and Tajima et al[4] noted that 100 percent of their participants were Japanese. Zhu et al[16] reported that the participants were predominantly Hispanic (approximately 41.3 percent) and Al Wattar et al[22] noted that the participants were predominantly Asian (approximately 43.7 percent).
- Socio-economic status:
    - Maternal education:
        - A majority of the studies reported that the participants had some college education.[6-9,11-16,23,25,26] When studies reported the years of education, most noted that a majority of the participants had ≥12 y of education.[3,17,20,21] Maugeri et al[19] noted that < 20 percent of the participants had low-medium education (defined as ≤ 8 y of education), but did not give other details. Similarly, Gesteiro et al[2] reported that 83 percent of the participants had medium or high education (but did not categorize education further).
        - However, the following were exceptions: Ancira-Moreno et al noted that >50 percent of the participants had < 9 y of education.[18] Fernandez-Barres et al[1] reported that 63.6 percent of the participants had secondary education or less.
        - Four studies did not report maternal education.[4,5,22,24]

    (Note: Fulay et al,[12] who used Project Viva data, reported that approximately 32 percent of their participants had a college education, whereas Rifas-Shiman et al[6] and Sen et al,[9] who also used Project Viva data with a similar sample size as Fulay et al, reported that approximately 69 percent had college degrees).

- Income: In the 17 articles that reported household income and/or participant employment status, the majority of women were employed and/or from middle-to-high income households.[1,3,6-9,12,15-17,19,21,23,25,26] Two studies[20,24] reported that the majority of participants were from low SES backgrounds.

Interventions/Exposures

Dietary Patterns

Dietary pattern (DP) was defined as the quantities, proportions, variety, or combination of different foods, drinks, and nutrients (when available) in diets, and the frequency with which they were habitually consumed. At minimum, there had to be a description of the foods and beverages in the pattern. Dietary patterns may have been measured or derived using a variety of approaches, such as adherence to a priori patterns (indices/scores), data driven patterns (factor or cluster analysis), reduced rank regression, or other methods, including clinical trials.

Dietary patterns were assessed using 1) index/score analysis, 2) factor analysis and principal component analysis (PCA), 3) experimental diet, and 4) reduced rank regression. A description of the studies categorized by the method used to measure dietary patterns is included below:

Index/Score Analysis

Fifteen articles included in this review used one or more of the following indices/scores summarized below:

- Maternal Diet Quality Score (MDQS)[18]
- Alternative Healthy Eating Index (AHEI) and its modifications[6,7,13]
- Healthy Eating Index (HEI)[2,16,20]
- relative Mediterranean Diet (rMED) score[1]
- Dietary Approaches to Stop Hypertension (DASH) and its modifications[12]
- Mediterranean Diet Adherence (MDA)[2]
- New Nordic Diet (NND)[5]
- Norwegian Fit for Delivery (NFFD) Diet[21]
- Dietary risk scores[14]
- Healthy Food Intake Index (HFII)[10]
- Dietary Inflammatory Index (DII)[9]
- Dutch Healthy Diet Index[8]

Factor analysis and PCA

Five studies included in this review assessed dietary patterns using factor analysis or PCA.[3,8,15,17,19]

Experimental Diet

Three RCTs[22,23,25,26] in this review assigned participants to an experimental diet (i.e. Mediterranean diet, DASH diet) or a control diet.

Reduced Rank Regression

One study[11] assessed adherence to DPs (patterns 1 and 2) derived using reduced rank regression.

Table 2. Dietary pattern components[iii]

Reference	Dietary pattern	Dietary components
Index/Score Analysis		
Ancira-Moreno et al[18]	MDQS	Vegetables and fruits; legumes; low-fat dairy products; PUFAs (positive) Red meat; added sugars; foods high in saturated fat or added sugar (negative)
Emond et al[13]	AHEI-2010	Vegetables; fruits; whole grains; nuts and legumes; long-chain (n-3) fats; PUFAs (positive) Red and processed meats; sugar-sweetened beverages and fruit juice; *trans* fats; sodium (negative) Alcohol component excluded
Fernández-Barrés et al[1]	rMED	Vegetables; fruits and nuts; cereals; legumes; fish; olive oil (positive) Meat; dairy (negative) Alcohol component excluded
Fulay et al[12]	DASH	Vegetables; fruits; whole grains; nuts and legumes; low-fat dairy (positive) Red and processed meat; sugar-sweetened beverages; sodium (negative)
	DASH OMNI	Vegetables; fruits; whole grains; nuts and legumes; low-fat dairy; PUFAs; MUFAs (positive) Red and processed meat; sugar-sweetened beverages; sodium (negative)
Gesteiro et al[2]	HEI	Vegetables; fruits; cereals, grains, and legumes; meat, eggs, and fish; milk and dairy products; dietary variety Total fats; SFAs; cholesterol; sodium

[iii] EVOO: extra virgin olive oil, MUFA: monounsaturated fatty acid, OMNI: optimal macronutrient intake, PCA: principal component analysis, PUFA: polyunsaturated fatty acid, SFA: saturated fatty acid

Reference	Dietary pattern	Dietary components
	MDA	Total vegetables; raw vegetables; fruits (including natural fruit juices); legumes; nuts (including peanuts); chicken, turkey, or rabbit meat; fish or shellfish; olive oil; dishes seasoned with sofrito (positive) Red meat, veal, hamburger, or sausage; butter, margarine or cream; sweet or carbonated beverages; commercial sweets or pastries (negative) Alcohol component excluded
Hillesund et al 2014[5]	NND	Root vegetables; cabbages; potatoes relative to rice and pasta; Nordic fruits; foods from the wild countryside (game, fish, seafood, and native berries); whole grain breads relative to refined breads; oatmeal porridge; unsweetened milk relative to fruit juice; water relative to sweetened beverages; meal frequency (positive)
Hillesund et al 2018[21]	NFFD diet	Vegetables with dinner; fruits or vegetables as snacks; water relative to other beverages; small portion size of one or more unhealthy food items (soda, salty crisps, or chocolate); meal frequency; never eating sweets and snacks without appreciation; reading nutrition labels (positive) Sugar-rich food items; fast-foods, snacks, or other salty food; eating beyond satiety (negative)
Hrolfsdottir et al[14]	Dietary risk score (13 risk factors)	Low intake of vegetables and fruits; whole grains; beans, nuts, and seeds; dairy; fish; vitamin D Low dietary variety High intake of processed meat; french fries and fried potatoes; dairy; sweets, ice cream, cakes, and cookies; sugar and artificially sweetened beverages; butter relative to oil
	Dietary risk score (6 risk factors)	Low intake of vegetables and fruits; whole grains; dairy Low dietary variety High intake of dairy; sugar and artificially sweetened beverages

Reference	Dietary pattern	Dietary components
	Dietary risk score (4 risk factors)	Low intake of whole grains; dairy High intake of dairy; sugar and artificially sweetened beverages
Meinila et al[10]	HFII	Vegetables; fruits and berries; high-fiber grains; fish; low-fat milk; low-fat cheese; vegetable oils as cooking fat; oil-based fat spreads (positive) Sugar-sweetened beverages (including juice); fast food; snacks with added sugar or salt (negative)
Poon et al[7]	AHEI-P	Vegetables; whole fruit; whole grains; nuts and legumes; long-chain (n-3) fats; PUFAs; calcium; folate; iron (positive) Red and processed meats; sugar-sweetened beverages; *trans* fats; sodium (negative) Alcohol component excluded
Rifas-Shiman et al[6]	AHEI-P	Vegetables (includes tofu and soybeans); fruits; ratio of white (poultry, fish) to red meat (beef, pork, lamb, processed); ratio of PUFAs to SFAs; fiber; calcium; folate; iron (positive) *Trans* fats (negative) Alcohol and nut components excluded
Sen et al[9]	DII	Vegetables; fruits; whole grains; fish and seafood; whole eggs (positive) Red and processed meat; sugar-sweetened soda (negative)
Tielemans et al[8]	Dutch Healthy Diet Index	Vegetables; fruits; fish; fiber (positive) SFAs; sodium (negative) Alcohol, acidic food and drink, and *trans* fat components excluded
Yong et al[20]	Modified HEI for Malaysians	Vegetables; fruits; cereals and grains; legumes; poultry, meat, and eggs; fish and seafood; milk and milk products; total fats; sodium (negative)
Zhu et al[16]	HEI-2010	Total vegetables; beans and greens; total fruit; whole fruit; whole grains; total protein foods; seafood and plant proteins; dairy; ratio of PUFAs and MUFAs to SFAs (positive)

Reference	Dietary pattern	Dietary components
		Refined grains; calories from solid fats and added sugars; sodium (negative) Alcohol component excluded
Factor Analysis and PCA[iv]		
Maugeri et al[19]	Western	High intake of red meat, fries, dipping sauces, salty snacks and alcoholic drinks
	Prudent	High intake of boiled potatoes, cooked vegetables, legumes, pizza and soup
Okubo et al[3]	Meat and eggs	High intake of beef and pork, processed meat, chicken, eggs, butter, and dairy products
	Wheat products	High intake of bread, confectioneries, fruit and vegetable juice, and soft drinks
	Rice, fish, and vegetables	High intake of rice, potatoes, nuts, pulses, fruits, green and yellow vegetables, white vegetables, mushrooms, seaweeds, Japanese and Chinese tea, fish, shellfish, sea products, miso soup, and salt-containing seasoning
Tielemans et al[8]	Vegetable, Oil and Fish	High intake of vegetables, oil, and fish
	Nuts, High-Fiber Cereals, and Soy	High intake of nuts, high-fiber cereals, and soy
	Margarine, Sugar, and Snacks	High intake of margarine, sugar, and snacks
Wei et al[15]	Cereals	Richer in cereals
	Vegetables	Richer in vegetables
	Meats	Richer in meats
	Fruits	Richer in fruits
	Fish, beans, nuts, and yogurt	Richer in fish, beans, nuts, and yogurt
	Milk and milk powder	Richer in milk and milk powder

[iv] Author-derived dietary pattern

Reference	Dietary pattern	Dietary components
Wesolowska et al[17]	Western	High intake of refined grains, processed meat, potatoes, and very low intake of whole grains
	Mixed	Intake between Western and Prudent
	Prudent	High intake of fruit, vegetables, legumes, whole grains, poultry, and low-fat dairy products
Experimental Diet		
Al Wattar et al[22]	MED-style Diet	High consumption of nuts, extra virgin olive oil, fruits, vegetables, non-refined grains, and legumes; moderate-to-high consumption of fish; low-to-moderate amounts of poultry and dairy products, such as yogurt and cheese; low consumption of red meat and processed meat; avoidance of sugary drinks, fast food, and foods rich in animal fat. Mixed nuts (walnuts, hazelnuts, and almonds) and EVOO provided by investigators.
	Control	Diet recommended as per U.K. national recommendations for antenatal care
Assaf-Balut et al[23,26]	Control	Mediterranean Diet: High consumption of vegetables, fruit (avoiding juices), skimmed dairy products, whole grain cereals, and legumes; moderate-to-high consumption of fish; low consumption of red and processed meat; avoidance of refined grains, processed baked goods, pre-sliced bread, soft drinks and fresh juices, fast foods, and precooked meals; restriction of dietary fat, including EVOO and nuts
	Intervention	Mediterranean Diet plus EVOO and pistachios provided by investigators
Van Horn et al [25]	Mama-DASH	Encouraged consumption of low-fat dairy products, fish, skinless poultry, lean meat and vegetable protein, unsaturated fats, fiber-rich whole grains, fruits, vegetables, and legumes; discouraged consumption of sugar-sweetened beverages, sweets, and non-nutrient-dense snack foods; avoidance of fish considered higher in mercury; inclusion of calcium-rich, vitamin D−enriched dairy, or calcium-fortified non-dairy products

Reference	Dietary pattern	Dietary components
	Control	Usual care, including bi-weekly newsletters and publicly available maternity website links
Reduced Rank Regression[v]		
Starling et al[11]	Pattern 1	Higher consumption of poultry, nuts, cheese, fruits, whole grains, added sugars, and solid fats
	Pattern 2	Higher consumption of eggs, starchy vegetables, solid fats, fruits, and non-whole grains and a lower consumption of dairy foods, dark-green vegetables, and whole grains

[v] Author-derived dietary pattern

Diets based on Macronutrient Distribution

Studies assessing diets based on macronutrient distributions outside of the acceptable macronutrient distribution range (AMDR) had to specify the distribution of carbohydrate, fat, and protein in the diet to be considered for this review. Macronutrient proportions outside of the AMDR are as follows:

- Carbohydrate for all age groups: < 45 or > 65 percent of energy;
- Protein for ≥ 19 years: < 10 or > 35 percent of energy;
- Fat for ≥ 19 years: < 20 or > 35 percent of energy

One RCT and one prospective cohort study[4,24] in this review assessed macronutrient proportions and reported the percentage of total energy from fat was higher than the AMDR for one of the groups.

Time point of exposure

The RCTs[22-26] randomized women during the late first trimester[23,26] or early second trimester[22,24,25] and followed them to the end of the second trimester.[22-26]

Most of the cohort studies administered food frequency questionnaires (FFQ) or 24 hour recalls toward the end of the first trimester or early in the second.[2,6,8-10,12,14,16,19-21] Investigators typically collected retrospective dietary data reflecting early pregnancy intake (i.e. first trimester). In a few studies, maternal dietary data were collected in the second trimester[3,5,13,15,17] or third trimester,[1,7] reflecting intake in the past week,[15] month,[3,7] or the entire pregnancy until that point.[13,17] In a few cohorts, dietary data were collected at multiple time points and assessed at individual time points (e.g. by trimester) or combined in the analysis.[6,9,11,20]

Outcome

The outcome considered in this review was gestational weight gain (GWG), reported in a number of ways, including total GWG,[2,3,7,11,12,15,16,19,22,25] GWG for a specified time period [23,24,26] or trimester,[10] GWG rate,[1,4,8,15,18,20] and GWG adequacy.[5,6,8,9,13-15,17-21,23,25] The studies that assessed GWG adequacy classified GWG as inadequate, adequate, or excessive according to the Institute of Medicine (2009) guidelines[vi], with the exception of Rifas-Shiman et al,[6] who used Institute of Medicine (1990) guidelines[vii], Hrolfsdottir et al,[14] who used Icelandic recommendations (no reference provided), and Assaf-Balut et al,[23] who had cited a previous publication[viii].

[vi] Institute of Medicine (US) and National Research Council (US) Committee to Reexamine IOM Pregnancy Weight Guidelines. Weight Gain During Pregnancy: Reexamining the Guidelines. (Rasmussen KM, Yaktine AL, eds.). Washington (DC): National Academies Press (US); 2009

[vii] Institute of Medicine (US) Committee on Nutritional Status During Pregnancy and Lactation. Nutrition During Pregnancy: Part I Weight Gain. Washington (DC): National Academies Press (US); 1990

[viii] Hutcheon JA, Platt RW, Abrams B, Himes KP, Simhan HN, Bodnar LM. Pregnancy weight gain charts for obese and overweight women. *Obesity*. 2015; 23(3): 532-535. doi: 10.1002/oby.21011.

Evidence synthesis

With 26 articles, there is a substantial body of evidence available to examine the association between DPs during pregnancy and GWG (Table 3, Table 4). However, there is heterogeneity in the methods used to define and assess DPs and how outcomes were reported, which made it difficult to compare results across studies. Furthermore, the time period of dietary assessment and the duration of the recall also varied across studies.

Dietary patterns assessed via index/score

Fifteen articles used indices/scores to assess DPs and the findings are described below:

- Ancira-Moreno et al[18] assessed the association between adherence to the *Maternal Diet Quality Score (MDQS)* and GWG trajectories (baseline n=660) in Mexican participants. The MDQS was based on the Mexican Dietary Guidelines and international recommendations for specific foods and was characterized by higher intake of PUFAs, fruits and vegetables, legumes, and low-fat dairy products; lower in foods higher in saturated fat, added sugars, and red meat. The study accounted for key confounders including age, SES, physical activity, prepregnancy BMI, GDM, hypertension, and parity. Anciro-Moreno et al also adjusted for energy intake (kilocalories per day) in the model when assessing whether diet quality was independent of total energy. The study noted the following findings:
    - Medium and high adherence throughout pregnancy were associated with lower risk of inadequate weight gain, but only high adherence was associated with lower risk of excessive weight gain.
    - When the investigators assessed specific time periods during pregnancy they noted that:
        - Medium adherence to the MDQS was associated with significantly lower rate of weight gain during middle pregnancy (20-30 weeks).
        - In late pregnancy (30-40 weeks), medium and higher adherence were positively associated with the rate of GWG.
        - When looking at weight gain beyond 40 weeks (defined by authors as prolonged pregnancy), higher adherence was associated with lower rate of weight gain.
- Emond et al[13] examined maternal adherence to the *Alternative Healthy Eating Index-2010 (AHEI)* and GWG in a U.S.-based cohort (baseline n=1,140). The AHEI-2010 was characterized by higher intake of six ‘healthful’ components, including: fruits, vegetables, whole grains, nuts and legumes, long-chain n–3 fatty acids from foods and supplements, and PUFAs; and lower intake of four components, including: sugar-sweetened beverages and fruit juice, red and processed meats, *trans* fatty acids, and sodium. The primary objective of this study was to assess the association between the AHEI-2010 and infant outcomes. The study reported that there were no significant differences in GWG adequacy (i.e., insufficient, adequate, excessive) based on different levels of

adherence to the AHEI-2010. None of the key confounders were accounted for in the analysis.

- In a Spain-based cohort study with a baseline sample size of 2,195 participants, Fernandez-Barres et al[1] assessed maternal adherence to the *relative Mediterranean Diet (rMED) score*, which was constructed by taking into account the consumption of vegetables, fruits and nuts, cereals, legumes, fish, olive oil, meat, and dairy products. The scoring for meat and dairy products was reversed. Although GWG was assessed, the study was designed to examine the association between the rMED and the child's longitudinal BMI and cardiometabolic risk. The study reported that highest adherence to the rMED DP was associated with significantly lower mean GWG (kilogram per week). The study did not account for any of the key confounders.
- In the U.S.-based Project Viva study (baseline n=2,128), Fulay et al[12] examined the association between the *DASH diet* and GWG, in addition to other pregnancy outcomes. The authors noted that the DASH diet was similar to the Mediterranean diet in that both are rich in fruits, vegetables, legumes, whole grains, and healthy fats, with limited amounts of poultry, red meat, and dairy. In addition, the DASH diet emphasized reduced intake of sodium, saturated fat, total fat, and cholesterol, and higher intake of fiber and protein. As a variation of DASH, the authors also assessed the association between the *DASH OMNI* (supplemented by higher unsaturated fat intake) and GWG. After adjusting for total energy intake and key confounders (including age, race/ethnicity, SES, prepregnancy BMI, smoking and parity) in a statistical model, the authors reported that greater adherence to the DASH and DASH OMNI diets was associated with greater subsequent GWG. This was primarily observed among women who were obese during prepregnancy (≥ 30 kg/m^2) and not in those who were overweight, normal weight or underweight.
- Gesteiro et al[2] examined the association between maternal *Mediterranean Diet Adherence (MDA)*, the *Healthy Eating Index (HEI)*, and GWG, in a Spanish cohort study (baseline n=35).
    - High MDA (≥ 7) was characterized by the use of olive oil as the main dietary fat, higher intakes of vegetables, raw vegetables, fruits, fish or shellfish, nuts (including peanuts), legumes, chicken, turkey or rabbit meat, and dishes seasoned with sofrito, sauce made with tomato, onion, leek or garlic, and simmered with olive oil, and lower intakes of red meat, veal, pork, hamburger or sausage, butter, margarine or cream, sweet or carbonated beverages, and commercial sweets or pastries.
    - The HEI was characterized by intake of cereals, grains and legumes, vegetables, fruits, milk and dairy products, meat, eggs and fish, total fat, saturated fat, cholesterol (milligrams per day), and sodium (grams per day). HEI also accounted for the intake of total fat, saturated fat, sodium and dietary variety.

  The primary objective of this study was to assess the association between first trimester diet quality, measured by the HEI and MDA, and insulin sensitivity/resistance biomarkers at birth. The study accounted for key confounders, including race/ethnicity, smoking, and GDM. The investigators noted that women with higher MDA (≥ 7) had significantly higher total GWG, when compared to those with lower MDA (< 7). There were no significant differences in GWG between women with adequate vs. inadequate HEI adherence.

- Hillesund et al[5] examined the association between the *New Nordic Diet (NND)* and GWG and fetal growth in this Norwegian cohort study (baseline n=66,597). The NND measured the frequency of eating of the following foods: Nordic fruits (apples, pears, plums, strawberries), root vegetables (carrots, rutabaga and various types of onions), cabbages (kale, cauliflower, broccoli and Brussels sprouts), potatoes, whole grain breads, oatmeal porridge, foods from the wild countryside (wild fish, seafood, game and wild berries), milk, and water. There were significant differences in GWG adequacy between groups, depending on the extent of NND adherence. Specifically, the proportion of women with excessive GWG was higher in the low adherence group compared to the medium or high adherence groups. When stratified by prepregnancy BMI, these results were consistent for women with a healthy prepregnancy BMI (BMI < 25.0 kg/m^2), and marginally significant for those who were overweight or obese (BMI ≥ 25 kg/m^2) prior to pregnancy (p=0.076). None of the key confounders were adjusted for in the analysis.
- Hillesund et al[21] assessed maternal adherence to the *Norwegian Fit for Delivery (NFFD) Diet* in this Norwegian cohort study (based on the Norwegian Fit for Delivery trial) with a baseline sample size of 606. The NFFD diet was characterized by ≥ 24 main meals per week, water for ≥ 44 percent of drinking events, vegetables with dinner ≥ 5 per week, fruits or vegetables as snacks ≥ 3 per week, < 1 per day sugar-rich food items, <1 per day fast-foods, snacks, or other salty food, never eating sweets and snacks without appreciation, buying small portion size of ≥ 1 unhealthy food items, eating beyond satiety < 1 per week, and reading nutrition labels on foods sometimes or often. The main objective of the study was to assess the association between the NFFD diet and a number of maternal and neonatal outcomes, including GWG. After accounting for the key confounders, including age, SES, prepregnancy BMI, smoking and parity, there was a statistically significant inverse association between early pregnancy NFFD diet score and the odds of excessive GWG. This association remained significant even after adjusting for physical activity, in addition to other key confounders. There was no association between diet scores and inadequate GWG.
- Hrolsdottir et al,[14] an Icelandic cohort study (baseline n=1,326), assessed the association between *dietary risk scores* and excessive GWG. A high dietary risk score was characterized by a non-varied diet, non-adequate frequency of consumption of fruits/vegetables, dairy, and whole grain intake, and excessive intake of sugar/artificially sweetened beverages and dairy. After accounting for the key confounders, including age, SES, prepregnancy BMI, smoking, parity and GDM (only in a sub-analysis), the study showed that a higher dietary risk score (which included 6 dietary risk factors - a non-varied diet, vegetables and fruits < 5 times per day, dairy intake < 2 times per day, whole grain products < 2 times per day, sugar- and artificially sweetened beverages ≥ 5 times per week,

dairy intake ≥ 5 times per day) was associated with excessive GWG. Similarly higher dietary risk score with three foods (sugar- and artificially sweetened beverages ≥ 5 times per week, whole grain products < 2 times per day and dairy intake ≥ 5 times per day) was associated with the risk of excessive GWG; however, there was no association between dietary risk score when 13 foods were considered (not eating a varied diet, vegetables and fruits < 5 times per day, fish intake < 2 times per day, dairy intake < 2 times per day, whole grain products < 2 times per day, beans, nuts, seeds < 3.5 times per week, D-vitamin < 5 times per week, quality of fat - using butter rather than oil (≥ 50%) French fries and fried potatoes ≥ 1 times per week, sweets, ice cream, cakes, cookies ≥ 2.5 times per week, sugar- and artificially sweetened beverages ≥ 5 times per week, dairy intake ≥ 5 times per day, processed meat products ≥ 1 times per week).

- Meinila et al,[10] a Finnish prospective cohort study (based on the control arm of the RADIEL trial), assessed the association between the *Healthy Food Intake Index (HFII)* and GWG (baseline n=137). The primary objective of this study, however, was to assess the association between the HFII and GDM. A higher HFII score was indicative of higher adherence to the Nordic Nutrition Recommendations (NNR), characterized by the following: 1) increased consumption of vegetables, fruits, fish and seafood, nuts and seeds; 2) substituting whole grains for refined grains, vegetable oils for butter, oil-based fat instead of butter-based spread and low-fat dairy instead of full-fat dairy; and 3) limiting beverages and foods with added sugar or salt, including snacks, sugar-sweetened drinks/juice, fast foods, and red and processed meat. Adherence to the HFII was not associated with GWG from the first to the second trimester. None of the key confounders were accounted for in the analysis.
- Poon et al[7] assessed adherence to the *Alternate Healthy Eating Index for Pregnancy (AHEI-P)* and its association with GWG in a U.S.-based cohort study (baseline n=893). The primary objective of this study was to examine the impact of the maternal DP on the incidence of SGA and LGA. The AHEI-P was characterized by higher intake of vegetables, whole fruit, whole grains, nuts and legumes, long-chain (n-3) fatty acids, PUFAs, folate, calcium, and iron, and lower intake of sugar-sweetened beverages, red and processed meat, *trans* fat, and sodium. The authors reported no significant difference in GWG across different levels of adherence to the AHEI-P. None of the key confounders were accounted for in the analysis.
- Rifas-Shiman et al[6] also used a modified AHEI called *AHEI-P*, characterized by the intake of vegetables (including tofu or soybean), fruit, ratio of white-to-red meat, fiber, *trans* fat, ratio of polyunsaturated-to-saturated fatty acids, and folate, calcium, and iron from foods. The authors made some changes to the AHEI by excluding alcohol and nuts and including folate, calcium and iron intake. Although the AHEI-P indices assessed by Poon et al[7] and Rifas-Shiman et al[6] are similar, they are not the same. The main objective of this U.S.-based study (baseline n=1,777), which used Project Viva data, was to assess the maternal characteristics associated with the AHEI-P score, with GWG measured as a secondary outcome. After adjusting for the key confounders, including age, race/ethnicity, SES and prepregnancy BMI, the study found that greater

adherence to the AHEI-P was not associated with altered risk for inadequate or excessive GWG.

- Sen et al[9] also used Project Viva data to assess the association between prenatal *Dietary Inflammatory Index (DII)* and a number of perinatal outcomes, including GWG (baseline n=1,808). Lower DII is characterized by higher intakes of vegetables, fruit, whole-grain foods, fish/seafood, and whole eggs, and lower intakes of red or processed meats and sugar-sweetened soda. After accounting for the key confounders, including age, race/ethnicity, SES, prepregnancy BMI, smoking and parity, the study found no association between consuming a lower DII diet and GWG.
- Tielemans et al[8] used the Netherlands-based Generation R study data to assess the association between an a priori and an a posteriori DP and GWG (baseline n=4,097). The latter findings are discussed in the next section. The *Dutch Healthy Diet Index* (a priori DP) consisted of 6 components, including vegetables, fruit, dietary fiber, fish, saturated fatty acids, and sodium. After accounting for the key confounders, including, age, race/ethnicity, SES, prepregnancy BMI, smoking, GDM, hypertension and parity, the study found no significant association between the Dutch Health Diet Index and GWG.
- Yong et al[20] examined the association between diet quality and GWG in a Malaysia-based Seremben Cohort Study (baseline n=480). Specifically, the study used a *modified HEI for Malaysians*, which measured adherence to the seven food groups, including 1) cereals and grains, 2) vegetables, 3) fruits, 4) milk and milk products, 5) poultry, meat and egg, 6) fish and seafood, and 7) legumes. After adjusting for the key confounders, including, age, SES, physical activity, prepregnancy BMI and parity, the authors reported that a higher HEI score in the third trimester was associated with excessive GWG, irrespective of prepregnancy BMI. However, during the second trimester, the association between the HEI and GWG varied based on prepregnancy BMI. In women with a prepregnancy BMI (18.50–24.99 kg/m^2), higher HEI was associated with lower odds of inadequate GWG. In women who were overweight or obese during prepregnancy, higher HEI was associated with increased odds of excessive GWG.
- Zhu et al,[16] using the U.S.-based PETALS cohort, investigated the association between the *HEI-2010* and GWG, although the primary objective of this study was to investigate whether maternal diet quality affected fetal growth (baseline n=2,269). The HEI-2010 included 12 components: total fruit, whole fruit, total vegetables, greens and beans, whole grains, dairy, total protein foods, seafood and plant proteins, fatty acids, refined grains, sodium, and empty calories from solid fats, alcohol and added sugars. However, for this study, alcohol intake was excluded from the empty calories component. The study reported that total GWG did not differ among women across different levels of adherence to the HEI-2010. None of the key confounders were accounted for in the analysis.

Summary: Of the 15 articles that assessed maternal DPs using an index/score method, eight showed an association with GWG.[1,2,5,12,14,18,20,21] Four of the eight showed that greater adherence to a beneficial DP was either associated with a: 1) lower risk of excessive GWG, [5,21] 2) lower rate of GWG,[18] or 3) lower mean GWG.[1] An additional study showed that greater adherence to a ‘detrimental’ DP was associated with excessive GWG.[14] However, three studies showed that higher adherence to a beneficial DP (i.e. DASH, DASH OMNI, Mediterranean Diet, HEI) was associated with higher GWG, either in all participants[2] or only in obese women.[12,20] Six of the eight articles[2,12,14,18,20,21] that showed an association adjusted for one or more of the key confounders.

Among the seven articles that did not show an association,[6-10,13,16] four did not adjust for any of the key confounders, nor were they primarily designed to address the association between DP and GWG.[7,10,13,16] In two of these, the timing of exposure assessment was also different, with one assessing maternal diet at the end of the second trimester[13] and the other during the third trimester.[7] Two other articles that did not show an association were both conducted with the same cohort (Project Viva).[6,9]

Dietary patterns assessed via factor or principal components analysis

Five studies[3,8,15,17,19] used data-driven methods (i.e. PCA, exploratory factor analysis, and cluster analysis) to assess dietary patterns:

- Maugeri et al[19] used PCA to generate the following dietary patterns:
    - *Western pattern* characterized by high intake of red meat, fries, dipping sauces, salty snacks, and alcoholic drinks
    - *Prudent pattern* characterized by high intake of boiled potatoes, cooked vegetables, legumes, pizza, and soup

The primary objective of this Italian study (baseline n=232) was to assess the association between maternal DPs and total GWG. In a statistical model, the analysis adjusted for total energy intake and key confounders, including, age, SES, smoking, GDM, hypertension, and parity. The study reported a positive trend of GWG across tertiles of a Western DP and this was more prominent in women who were obese prior to pregnancy. On the other hand, adherence to a prudent DP was positively associated with GWG among women who were underweight before pregnancy and negatively associated with GWG among women who were overweight and obese women before pregnancy.

- In a Japanese prospective cohort study (baseline n=803), Okubo et al[3] used a cluster analysis to create the following dietary patterns:
    - *Meat and eggs pattern* characterized by high intake of beef and pork, processed meat, chicken, eggs, butter, and dairy products
    - *Wheat products pattern* characterized by high intake of bread, confectioneries, fruit and vegetable juice, and soft drinks
    - *Rice, fish, and vegetables pattern* characterized by high intake of rice, potatoes, nuts, pulses, fruits, green and yellow vegetables, white vegetables, mushrooms, seaweeds, Japanese and Chinese tea, fish, shellfish, sea products, miso soup, and salt-containing seasoning

The primary objective of the study was to assess the association between maternal diet and neonatal anthropometric measurements at birth. The study noted that greater adherence to the wheat products DP was associated with significantly higher mean GWG when compared to the rice, fish, and vegetable DP. None of the key confounders were adjusted for in the analysis.

- In a Dutch cohort study with a baseline n=4,097, Tielemans et al[8] used a PCA to generate the DPs described below:
  - *Vegetable, Oil, and Fish pattern* characterized by higher intake of vegetables, high fat dairy products, cereals (both low and high fiber), fish and shellfish, eggs and egg products, vegetable oils, coffee and tea, alcoholic beverages, and legumes
  - *Nuts, High-Fiber Cereals, and Soy pattern* characterized by higher intake of potatoes and other tubers, fruits, high and low fat dairy products, high fiber cereals, meat and meat products, fish and shellfish, coffee and tea, sugar-containing beverages, light soft drinks, nuts, seeds and olives, and soy products
  - *Margarine, Sugar, and Snacks pattern* characterized by higher intake of potatoes and other tubers, high fat dairy products, low and high fiber cereals, meat and meat products, margarine and butter, sugar and confectionary and cakes, snacks, sugar-containing beverages, condiments and sauces, nuts, seeds and olives

The primary objective of the study was to investigate the association between DPs and GWG. After accounting for the key confounders, including age, race/ethnicity, SES, prepregnancy BMI, smoking and parity, none of the DPs were associated with rate of GWG (grams per week) (mid- and late-pregnancy) in normal weight or overweight women. The findings were consistent after adjusting for total energy intake in a sensitivity analysis. Similarly, none of the DPs were associated with inadequate GWG. However, greater adherence to the margarine, sugar, and snacks DP was associated with increased odds of excessive GWG compared to the lowest adherence, although per standard deviation (SD) increase in DP score was not statistically significantly associated with GWG. Tielemans et al[8] also assessed the association between the Dutch Healthy Diet Index and GWG and the results were discussed in the previous section.

- In a Chinese prospective cohort study (baseline n=5,733), Wei et al[15] used cluster analysis to generate the following DPs according to the food groups that were predominant in each cluster:
  - *Richer in cereals* characterized by higher intake of cereals (rice, pasta, porridge) and eggs (fresh and preserved)
  - *Richer in vegetables* characterized by higher intake of leafy and cruciferous vegetables (dark green leafy vegetables, white leafy vegetables, broccoli, cauliflower)
  - *Richer in meats* characterized by higher intake of meats (red meat, including pork, beef, and mutton, and processed meat)
  - *Richer in fruits* characterized by higher intake of fruits (cherry/grapefruit/plum/apple/pear/peach, banana/oranges/grape, Watermelon/pineapple/mango/litchi/longan/durian and others) and Cantonese desserts

- *Richer in fish, beans, nuts, and yogurt* characterized by higher intake of cereals (noodles, bread), poultry, animal organ meat (animal liver, other animal innards, animal brain and animal blood), fish (freshwater fish, seawater fish, other seafood including prawn/crab, shell fish/squid, others), bean products (soybean, other dry beans, soybean milk and bean curd), nuts (oil nuts, starchy nuts, melon), vegetables (including pumpkin/tomato/capsicums/eggplant, root vegetables including carrot, potatoes/radishes/lotus root, bean vegetables, mushrooms, sea vegetables and processed vegetables), and yogurt (snack including biscuit, cornmeal, cake/fried dough twist, confectionaries including honey, candy/chocolate, other confectionaries, sweet beverage and puffed food)
- *Richer in milk and milk powder* characterized by higher intake of fresh milk, pasteurized milk, formula milk powder, fat free milk powder, whole milk powder, and others

The primary objective of this Chinese study was to assess the association between maternal DPs and GWG. The study accounted for some of the key confounders, including age, SES, prepregnancy BMI and parity. Among Chinese pregnant women with a healthy prepregnancy BMI, a DP richer in fruits (compared to a DP richer in cereals) was positively associated with total GWG and GWG rate. A DP richer in fruits was also associated with an increased risk for excessive GWG. A DP richer in fish, beans, nuts and yogurt, compared to a DP richer in cereals, was positively associated with GWG rate in the second trimester and was associated with a reduced risk for inadequate GWG.

- In a Polish prospective cohort study (baseline n=1,306), Wesolowska et al,[17] used an exploratory factor analysis to generate three DPs:
  - *Western pattern* characterized by higher intake of refined grains, processed meat, potatoes, and low intake of whole grains
  - *Mixed pattern* characterized by intakes in between Western and Prudent patterns
  - *Prudent pattern* characterized by high consumption of fruits, vegetables, legumes, whole grains, poultry, and both low-fat and high-fat dairy products

The primary objective of the study was to evaluate sociodemographic, lifestyle, environmental, and pregnancy-related determinants of DPs during pregnancy. The study reported no significant differences between the proportions of participants that gained recommended vs. low vs. high GWG across the DPs. None of the key confounders were adjusted for in the analysis.

Summary: Of the five studies that assessed maternal DPs using factor analysis or PCA, four[3,8,15,19] showed significant associations between a maternal DP and GWG. One study showed that greater adherence to a beneficial DP was associated with lower GWG,[19] while the same study and three others showed that greater adherence to a non-beneficial DP was associated with higher GWG.[3,8,15,19] Three of the four studies that showed an association adjusted for some of the key confounders.[8,15,19] The only study[17] that showed no association between DP and GWG did not adjust for any of the key confounders.

Dietary patterns assessed using an experimental diet in an RCT

Four articles from three RCTs assessed the relationship between an intervention and GWG:

- Al Wattar et al,[22] in a multicenter U.K.-based trial (baseline n=1,252), randomized pregnant women with metabolic risk factors such as obesity, chronic hypertension, or hypertriglyceridemia to a Mediterranean-style diet or a control diet.
  - Those randomized to the *Mediterranean-style diet* were encouraged to consume higher amounts of nuts, extra virgin olive oil, fruits, vegetables, non-refined grains, and legumes; moderate-to-high amounts of fish; low-to-moderate amounts of poultry and dairy products, such as yogurt and cheese; low amounts of red meat and processed meat; and to avoid sugary drinks, fast food, and foods rich in animal fat. Investigators provided mixed nuts (30 grams per day walnuts, hazelnuts, and almonds) and EVOO (0.5 liter per week) to the participants.
  - The *control* group received usual care and antenatal advice as per U.K. national recommendations for antenatal care.

  The primary outcomes were: 1) a composite maternal outcome that combined GDM and preeclampsia, and 2) a composite infant outcome that combined stillbirth and SGA or admission to neonatal care unit. GWG was considered a secondary maternal outcome. The study showed that metabolically at-risk women randomized to a Mediterranean-style dietary pattern had lower GWG when compared to the control group.

- In a single center, clinic-based RCT in Spain (baseline n=1,000), Assaf-Balut et al[23,26] randomized pregnant women to one of the following groups:
  - The control group was advised to follow a *Mediterranean Diet* with ≥ 2 servings vegetables per day, ≥ 3 servings of fruits per day (avoiding juices), 3 servings skimmed dairy products per day, 3 servings wholegrain cereals per day, and 2-3 servings of legumes per week, moderate-to-high consumption of fish, low consumption of red and processed meat, avoidance of refined grains, processed baked goods, pre-sliced bread, soft drinks and fresh juices, fast foods, and precooked meals. However, they were advised to restrict the consumption of dietary fat, including EVOO and nuts.
  - The intervention group was advised to follow the same Mediterranean Diet as the control group, and were advised to also consume 40 mL per day of EVOO and 25-30 grams per day pistachios. Investigators provided 10 liters of EVOO and 2 kilograms of roasted pistachios to the participants.

  The primary outcome of this RCT[26] was to assess the effect of the intervention diet on GDM incidence, with GWG as a secondary outcome. When compared to the control group, the intervention DP resulted in lower GWG between 12 to 24-28 weeks gestation in women with a prepregnancy BMI < 25 kg/m^2 (p=0.052) and overweight women (BMI ≥ 25 to ≤ 29.9 kg/m^2) (p=0.076). These findings were marginally significant. However, no significant differences in GWG between the intervention and control groups were noted in women who were obese prior to pregnancy (≥ 30 kg/m^2).

When considering GWG from 12 to 36-38 weeks, the total GWG was not different between the intervention and control groups. Although non-significant, the directionality of the findings changed. In all women, the intervention group gained more total GWG than the control group between the beginning of the second trimester to the end of the third trimester (p=0.12). Among women with a prepregnancy BMI < 25 kg/m^2, the intervention group tended to gain more weight than the control group (p=0.096), whereas among obese women there was no significant difference between groups (p=0.77), and among overweight women, those assigned to the control group tended to gain more weight than the intervention group (p=0.066).

In a sub-analysis of the St. Carlos GDM Prevention Study[23] with normoglycemic women, there were no significant differences in GWG from 12 weeks to 36-38 weeks between the control and intervention groups. Also, the study did not report significant differences in weight gain between the intervention and control groups after stratifying by adequacy of weight gain (i.e. excessive, adequate, inadequate).

- In a U.S.-based RCT (baseline n=281), Van Horn et al[25] randomized women who were overweight or obese (prepregnancy BMI 25-40 kg/m^2) to a DASH diet and lifestyle intervention or a usual-care group, as described below:
  - The intervention group was assigned to a slightly *modified DASH diet* (called Mama-DASH) and women were encouraged to consume a diet with low-fat dairy products, fish, skinless poultry, lean meat and vegetable protein, unsaturated fats, fiber-rich whole grains, fruits, vegetables, and legumes. They were also advised not to consume sugar-sweetened beverages, sweets, and non-nutrient-dense snack foods. Mama-DASH was designed to calorically suit the restricted weight gain recommendations (based on IOM) and to enable pregnant women to follow the nutrition guidelines specific for this population including avoidance of fish considered higher in mercury, and inclusion of calcium-rich, vitamin D−enriched dairy, or calcium-fortified non-dairy products.
  - The control group received the usual care that included bi-weekly newsletters and publicly available maternity website links.

  In addition to the diet, all participants were encouraged to engage in at least 30 minutes of activity or walking > 10,000 steps per day. The primary outcome of this study was GWG at 35 weeks. The study noted that pregnant women (with a prepregnancy BMI between 25-40 kg/m^2) randomized to the intervention group gained significantly less weight when compared to their counterparts in the control group. Most participants in both groups exceeded the IOM’s recommended weight gain, although it was less common in the intervention group (69 percent) compared to the control group (85 percent) (p=0.004). Physical activity goals were not achieved by the majority of participants.

Summary: Of the three RCTs that assessed the relationship between Mediterranean (vs usual care),[22] Mediterranean+EVOO (vs Mediterranean diet),[23,26] or modified DASH (vs usual care)[25] diets, two trials[22,25] showed that the women in the intervention group had significantly lower GWG than their counterparts in the control groups. The third trial by Assaf-Balut et al[23,26] showed that women assigned to the Mediterranean Diet+EVOO tended to have lower GWG only until the end of the second trimester (p=0.052). Both studies that showed an effect were conducted in either metabolically at-risk women[22] or women who were overweight or obese prior to pregnancy.[25] Consistent with these findings, Assaf-Balut et al[26] showed that among overweight women, those in the intervention group tended to have lower GWG than those in the control group (p=0.076) from 12 to 24 weeks; however, this difference was not observed in women who were obese prepregnancy. When considering GWG from 12 to 36-38 weeks, the total GWG was not different between the intervention and control groups. Although non-significant, there was a change in directionality for certain sub-groups (i.e. normal weight, obese women) with women randomized to the intervention group gaining more weight than the control group from 12 to 36-38 weeks.[26] As part of the same trial, a sub-analysis that was restricted only to normoglycemic women showed that there was no difference in GWG from 12 to 36-38 weeks between the intervention and control groups.[23]

Dietary patterns assessed via reduced rank regression

In a U.S.-based study (baseline n=764), Starling et al[11] arrived at DPs by "entering the residual intakes from each food group into a reduced–rank regression model." Two DPs were determined using this approach:

- *Pattern 1* was characterized by a higher consumption of poultry, nuts, cheese, fruits, whole grains, added sugars, and solid fats.
- *Pattern 2* was characterized by a higher consumption of eggs, starchy vegetables, solid fats, fruits, and non-whole grains and a lower consumption of dairy foods, dark-green vegetables, and whole grains.

The primary objective of this study was to assess the association between maternal DPs and newborn fat mass and adiposity, with maternal GWG as the intermediate variable. The study showed that women with greater adherence to pattern 1 (tertile 3) had significantly greater GWG (p for trend < 0.001). Similarly, women with greater adherence to pattern 2 (tertile 2 and tertile 3) had significantly greater GWG (p for trend=0.03). However, none of the key confounders were adjusted for in the analysis.

Diets based on macronutrient distributions

As described below, one RCT[24] and one prospective cohort study[4] assessed the association between diets based on macronutrient distributions and GWG.

- In a U.K.-based RCT (baseline n=183), Poston et al[24] randomized obese women (BMI ≥ 30 kg/m^2) to an intervention of dietary advice and physical activity delivered by health trainers vs. standard care. The primary outcome of the study was to assess the impact of the intervention on maternal (GDM) and neonatal (LGA) outcomes, with GWG reported as a secondary outcome. The dietary advice in the intervention group focused on increasing the consumption of foods with a low dietary glycemic index (GI), including replacing sugar-sweetened beverages with low GI alternatives and reducing saturated fat consumption and replacing with mono- and polyunsaturated fatty acids. At the end of the intervention, there were significant differences in total fat intake between the groups, with the control group consuming an average of 35.9 percent of total energy from fat (which is outside of the AMDR), while the intervention group consumed an average of 32.5 percent of total energy from fat. The study reported that there was no significant difference in GWG between the intervention and control groups. Physical activity was a co-intervention in the study but the authors reported no difference in physical activity between the intervention and control groups.

- Tajima et al,[4] in a Japanese prospective cohort study (baseline n=325), assessed the association between tertiles of carbohydrate intake and glucose tolerance test. Based on 3-d dietary records collected from participants, the investigators assessed the average carbohydrate, protein, total fat, and saturated fatty acid intake, and calculated the percentage of total energy intake for each component. Carbohydrate intake was calculated by subtracting the percent total energy from fat and protein intake from 100 percent and participants were categorized into tertiles based on their carbohydrate intake. The study reported that women in different tertiles of carbohydrate intake also differed significantly on percent energy from total fat intake ($p<0.001$). That is, women in the 'bottom' tertile for carbohydrate had 35.1 percent energy from total fat (which is outside of the AMDR); those in the 'middle' and 'top' tertiles for carbohydrate intake had 30.3 percent and 24.6 percent energy from total fat intake, respectively. The study also reported GWG across tertiles of carbohydrate intake (i.e., 'bottom', 'middle' and 'top') and noted that the mean weight gain per week was not significantly different across the groups. None of the key confounders were adjusted for in the analysis.

Summary: Two studies included in this body of evidence reported no significant difference in GWG[24] or rate of GWG[4] based on varying percentages of total energy intake from fat. Of note, neither the RCT nor the prospective cohort study manipulated percentage of energy from fat. Further, these studies were not designed to assess the relationship between macronutrient proportions and GWG. In the U.K. based trial, the control group consumed a greater percentage of total energy from fat (which was above the AMDR) when compared to the intervention group. GWG was measured as a secondary objective. While the U.K. trial did not deliberately manipulate percentage of energy from total fat, the investigators recommended replacing saturated fats with mono- and poly-unsaturated fatty acids for the intervention group, whereas routine care was recommended for the control group. The Japanese cohort study presented tertiles of carbohydrate intake and stratified GWG into categories. Women with 'bottom', 'middle' and 'top' carbohydrate intake also differed on percentage of total energy from fat. The study reported no difference in rate of GWG among these tertiles.

Assessment of the evidence[ix]

[ix] A detailed description of the methodology used for grading the strength of the evidence is available on the NESR website: https://nesr.usda.gov/2020-dietary-guidelines-advisory-committee-systematic-

The following conclusion statement was supported by three RCTs and 19 prospective cohort studies and was graded "limited." The individual grading elements are discussed below and summarized in Table 5 and Table 6.

"**Limited** evidence suggests that certain dietary patterns during pregnancy are associated with a lower risk of excessive gestational weight gain during pregnancy. These patterns are higher in vegetables, fruits, nuts, legumes, fish, and lower in added sugar, and red and processed meat"

The DPs examined were characterized by combinations of different foods and beverages. The patterns that were consistently shown to be associated with lower risk of excessive GWG commonly included the foods highlighted in the conclusion statement (i.e. higher in vegetables, fruits, nuts, legumes, fish and lower in added sugar, red and processed meat), although not all foods were part of the same pattern.

Grains and dairy products were included in a number of studies; however, the association between these foods and GWG was inconsistent. Specifically, in the 10 articles that included dairy products in a DP, some recommended consuming low-fat dairy products, while others recommended dairy consumption in moderation (without specifying percent fat), and a few other articles reverse coded it as they considered it to be detrimental. Similarly, five articles included whole/non-refined grains in a DP, of which four included it as part of a beneficial DP (meaning the DP that included whole grains was associated with a lower risk of excessive GWG). One additional article noted that avoidance of refined grains was beneficial. In three articles, it was unclear whether the participants consumed whole or refined grains and two other articles reported that participants consumed both whole and refined grains. Because of these inconsistencies, it was difficult to determine the relationship between grains or dairy and GWG.

Risk of bias was graded as limited for both RCTs and cohort studies.

- Most of the RCTs included in this body of evidence had notable flaws, as described below:
    - In a RCT conducted in Spain,[23,26] women randomized to both intervention and control groups received nutritional guidance to reduce the calorie content of their diet, individualized based on GWG in the first trimester BMI. In addition, women diagnosed with GDM in both the intervention and control group received treatment with insulin and/or diet. However, significantly more women in the control group were diagnosed with GDM. In the sub-analysis, [23] the investigators excluded participants with gestational diabetes and assessed the effect of the diet on GWG only in normoglycemic women. Since the selection of participants into this sub-analysis was based on post intervention status, this sub-analysis was treated as a "per-protocol analysis," rather than an "intention-to-treat analysis."

reviews and in Part C of the following reference: Dietary Guidelines Advisory Committee. 2020. *Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and the Secretary of Health and Human Services*. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC

- In the U.S.-based RCT,[25] there were issues with adherence, which was different between the intervention and control groups.
- Outcome assessment methods were not specified in at least one RCT.

- Similar to the RCTs, the cohort studies had serious flaws in the design and conduct of the studies:
  - No studies accounted for all the key confounders. Seven studies had potentially critical bias as none of the key confounders were accounted for.
  - More than half of the studies had selection bias issues because selection of the participants was related to characteristics observed after the start of the exposure.
  - Dietary data reflected dietary intake at a single time point during pregnancy. The exposure data were self-reported (typically collected around the end of the first trimester or later), and thus it is possible that classification of exposure status may have been impacted by the knowledge of the outcome.
  - Many studies reported co-exposures which were unbalanced across treatment groups.
  - Outcome data were self-reported and in a few studies reporting of outcome data may have been influenced by the knowledge of the exposure received.
  - None of the studies reported having a pre-registered data analysis plan.

Consistency was graded limited for both RCTs and cohort studies.

- Among the articles that assessed DPs using an index/score method, five showed that greater adherence to a beneficial DP was associated with a lower risk of excessive GWG. [1,5,14,18,21] However, three other articles showed that greater adherence to a beneficial DP was associated with excessive GWG.[2,12,20] Seven other articles showed no association between DPs and GWG.[6-10,13,16]
- Four of the five cohort studies[3,8,15,19] that assessed DPs using factor/cluster analysis showed an association with GWG, whereas one other study found no association between DPs and GWG.[17]
- One of the studies that assessed DP using reduced rank regression was associated with GWG.[11]
- Two RCTs showed that the intervention diet resulted in lower GWG.[22,25]
- Neither of the studies that assessed the relationship between a maternal high-fat diet (>35 percent total energy from fat) and GWG showed an association.[4,24]

Even among studies that found similar associations, the strength of the association could not be adequately assessed because of differences in study methods, including exposure and outcome assessment methodology.

The inconsistency in findings may be explained by the following:

- Key confounders: Many of the studies that reported null findings did not adjust for any of the key confounders. This can at least partly be attributed to the fact that the studies were not designed to assess the association, but rather presented the data because they assessed GWG as a secondary outcome or a mediator in the study.
- Exposure assessment: There was heterogeneity in exposure assessment methods. Studies used different approaches to generate DPs. The foods included in each DP were also different, thus making it difficult to compare exposures across studies.
- The inconsistencies in findings between RCTs may have been due to differences in study populations. The two RCTs that found an effect only included overweight/obese women, or metabolically at-risk women. On the other hand, the RCT that showed no effect recruited healthy women, which might partly explain the inconsistency in study findings.

Directness was graded as limited for both RCTs and prospective cohort studies. Only half of the studies in this body of evidence were designed to assess the association between DPs and GWG. For the rest, GWG was a secondary measure and thus the objectives of these studies did not necessarily align with the systematic review question. Often this also meant that most or all of the key confounders were not accounted for in the analysis.

Precision was graded as limited for both RCTs and prospective cohort studies. Most of the studies, except RCTs, did not report power analyses or sample size calculations. Even among the RCTs, two trials conducted power calculations for outcomes other than GWG and thus precision with respect to the present review is difficult to evaluate. Studies included in this body of evidence generally had moderate analytic sample sizes to investigate the relationship between maternal DPs and GWG. None of the studies unduly influenced the findings of this systematic review and removing a single study from this body of evidence would not likely change the conclusions.

Generalizability was graded as limited for both RCTs and prospective cohort studies. About one-fourth of the included studies (n=6), including only one RCT, were conducted in the U.S. Minority women were generally underrepresented in this body of evidence. Thirteen articles reported that their participants were predominantly White and nine others did not report race/ethnicity of the participants. With regard to SES, most women in the studies had at least some college education and participants were generally from mid-high income households. Participants were primarily adult women and none of the studies focused on adolescent mothers. Two RCTs recruited only women who were overweight/obese or had other metabolic risk factors. For the reasons stated above, it is unclear if the findings from this systematic review would be applicable to a more diverse U.S. population.

Publication bias is definitely a consideration for the systematic reviews. However, it may not be a serious concern for this body of evidence because at least a third of the studies reported non-significant findings while the others report significant findings or a mix of significant and non-significant findings.

Research recommendations

- Include diverse populations with varying age groups and different racial/ethnic and socioeconomic backgrounds.
- Foster collaborative efforts to score dietary patterns consistently, so that they can be compared and reproduced across studies.
- Adjust for key confounding factors in observational studies, including age, race/ethnicity, SES, physical activity, anthropometry (prepregnancy BMI), smoking, history/diagnosis of gestational diabetes and gestational hypertension, and parity.
- Develop a standardized recommendation of what constitutes a ‘high-fat’ or ‘low-carbohydrate’ dietary pattern.

Included articles

1. Fernandez-Barres S, Vrijheid M, Manzano-Salgado CB, et al. The association of Mediterranean diet during pregnancy with longitudinal body mass index trajectories and cardiometabolic risk in early childhood. *J Pediatr*. 2019;206:119-127 e116. doi:10.1016/j.jpeds.2018.10.005
2. Gesteiro E, Rodriguez Bernal B, Bastida S, Sanchez-Muniz FJ. Maternal diets with low healthy eating index or Mediterranean diet adherence scores are associated with high cord-blood insulin levels and insulin resistance markers at birth. *Eur J Clin Nutr*. 2012;66(9):1008-1015. doi:10.1038/ejcn.2012.92
3. Okubo H, Miyake Y, Sasaki S, et al. Maternal dietary patterns in pregnancy and fetal growth in Japan: the Osaka Maternal and Child Health Study. *Br J Nutr*. 2012;107(10):1526-1533. doi:10.1017/S0007114511004636
4. Tajima R, Yachi Y, Tanaka Y, et al. Carbohydrate intake during early pregnancy is inversely associated with abnormal glucose challenge test results in Japanese pregnant women. *Diabetes Metab Res Rev*. 2017;33(6). doi:10.1002/dmrr.2898
5. Hillesund ER, Bere E, Haugen M, Overby NC. Development of a New Nordic Diet score and its association with gestational weight gain and fetal growth - a study performed in the Norwegian Mother and Child Cohort Study (MoBa). *Public Health Nutr*. 2014;17(9):1909-1918. doi:10.1017/S1368980014000421
6. Rifas-Shiman SL, Rich-Edwards JW, Kleinman KP, Oken E, Gillman MW. Dietary quality during pregnancy varies by maternal characteristics in Project Viva: a US cohort. *J Am Diet Assoc*. 2009;109(6):1004-1011. doi:10.1016/j.jada.2009.03.001
7. Poon AK, Yeung E, Boghossian N, Albert PS, Zhang C. Maternal dietary patterns during third trimester in association with birthweight characteristics and early infant growth. *Scientifica (Cairo)*. 2013;2013:786409. doi:10.1155/2013/786409
8. Tielemans MJ, Erler NS, Leermakers ET, et al. A priori and a posteriori dietary patterns during pregnancy and gestational weight gain: The Generation R study. *Nutrients*. 2015;7(11):9383-9399. doi:10.3390/nu7115476
9. Sen S, Rifas-Shiman SL, Shivappa N, et al. Dietary inflammatory potential during pregnancy is associated with lower fetal growth and breastfeeding failure: results from Project Viva. *J Nutr*. 2016;146(4):728-736. doi:10.3945/jn.115.225581
10. Meinila J, Valkama A, Koivusalo SB, et al. Association between diet quality measured by the Healthy Food Intake Index and later risk of gestational diabetes-a secondary analysis of the RADIEL trial. *Eur J Clin Nutr*. 2017;71(4):555-557. doi:10.1038/ejcn.2016.275
11. Starling AP, Sauder KA, Kaar JL, Shapiro AL, Siega-Riz AM, Dabelea D. Maternal dietary patterns during pregnancy are associated with newborn body composition. *J Nutr*. 2017;147(7):1334-1339. doi:10.3945/jn.117.248948
12. Fulay AP, Rifas-Shiman SL, Oken E, Perng W. Associations of the dietary approaches to stop hypertension (DASH) diet with pregnancy complications in Project Viva. *Eur J Clin Nutr*. 2018;72(10):1385-1395. doi:10.1038/s41430-017-0068-8
13. Emond JA, Karagas MR, Baker ER, Gilbert-Diamond D. Better diet quality during pregnancy is associated with a reduced likelihood of an infant born small

for gestational age: an analysis of the prospective New Hampshire birth cohort study. *J Nutr*. 2018;148(1):22-30. doi:10.1093/jn/nxx005

14. Hrolfsdottir L, Halldorsson TI, Birgisdottir BE, Hreidarsdottir IT, Hardardottir H, Gunnarsdottir I. Development of a dietary screening questionnaire to predict excessive weight gain in pregnancy. *Matern Child Nutr*. 2019;15(1):e12639. doi:10.1111/mcn.12639
15. Wei X, He JR, Lin Y, et al. The influence of maternal dietary patterns on gestational weight gain: A large prospective cohort study in China. *Nutrition*. 2019;59:90-95. doi:10.1016/j.nut.2018.07.113
16. Zhu Y, Hedderson MM, Sridhar S, Xu F, Feng J, Ferrara A. Poor diet quality in pregnancy is associated with increased risk of excess fetal growth: a prospective multi-racial/ethnic cohort study. *Int J Epidemiol*. 2019;48(2):423-432. doi:10.1093/ije/dyy285
17. Wesolowska E, Jankowska A, Trafalska E, et al. Sociodemographic, lifestyle, environmental and pregnancy-related determinants of dietary patterns during pregnancy. *Int J Environ Res Public Health*. 2019;16(5). doi:10.3390/ijerph16050754
18. Ancira-Moreno M, Vadillo-Ortega F, Rivera-Dommarco JA, et al. Gestational weight gain trajectories over pregnancy and their association with maternal diet quality: Results from the PRINCESA cohort. *Nutrition*. 2019;65:158-166. doi:10.1016/j.nut.2019.02.002
19. Maugeri A, Barchitta M, Favara G, et al. Maternal dietary patterns are associated with pre-pregnancy body mass index and gestational weight gain: results from the "Mamma & Bambino" cohort. *Nutrients*. 2019;11(6). doi:10.3390/nu11061308
20. Yong HY, Mohd Shariff Z, Mohd Yusof BN, et al. Pre-Pregnancy BMI influences the association of dietary quality and gestational weight gain: The SECOST study. *Int J Environ Res Public Health*. 2019;16(19). doi:10.3390/ijerph16193735
21. Hillesund ER, Bere E, Sagedal LR, et al. Pre-pregnancy and early pregnancy dietary behavior in relation to maternal and newborn health in the Norwegian Fit for Delivery study - a post hoc observational analysis. *Food Nutr Res*. 2018;62. doi:10.29219/fnr.v62.1273
22. Al Wattar BH, Dodds J, Placzek A, et al. Mediterranean-style diet in pregnant women with metabolic risk factors (ESTEEM): A pragmatic multicentre randomised trial. *PLoS Med*. 2019;16(7):e1002857. doi:10.1371/journal.pmed.1002857
23. Assaf-Balut C, Garcia de la Torre N, Duran A, et al. A Mediterranean diet with an enhanced consumption of extra virgin olive oil and pistachios improves pregnancy outcomes in women without gestational diabetes mellitus: a sub-analysis of the St. Carlos gestational diabetes mellitus prevention study. *Ann Nutr Metab*. 2019;74(1):69-79. doi:10.1159/000495793
24. Poston L, Briley AL, Barr S, et al. Developing a complex intervention for diet and activity behaviour change in obese pregnant women (the UPBEAT trial); assessment of behavioural change and process evaluation in a pilot randomised controlled trial. *BMC Pregnancy Childbirth*. 2013;13:148. doi:10.1186/1471-2393-13-148

25. Van Horn L, Peaceman A, Kwasny M, et al. Dietary approaches to stop hypertension diet and activity to limit gestational weight: maternal offspring metabolics family intervention trial, a technology enhanced randomized trial. *Am J Prev Med*. 2018;55(5):603-614. doi:10.1016/j.amepre.2018.06.015
26. Assaf-Balut C, Garcia de la Torre N, Duran A, et al. A Mediterranean diet with additional extra virgin olive oil and pistachios reduces the incidence of gestational diabetes mellitus (GDM): A randomized controlled trial: The St. Carlos GDM prevention study. *PLoS One*. 2017;12(10):e0185873. doi:10.1371/journal.pone.0185873
27. Meinila J, Valkama A, Koivusalo SB, et al. Association between diet quality measured by the Healthy Food Intake Index and later risk of gestational diabetes-a secondary analysis of the RADIEL trial. *Eur J Clin Nutr*. 2017;71(7):913. doi:10.1038/ejcn.2017.66

Table 3. Description of evidence on the relationship between dietary patterns during pregnancy and gestational weight gain[x]

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
Randomized Controlled Trials			
Index/Score			

Al Wattar, 2019[22]; U.K.
RCT, ESTEEM trial
 	
Baseline N=1252 Analytic N=468 (Attrition: 63%)
 	
n=~1190 for all participant characteristics
• Age: ~31.1y
• Race/Ethnicity:
  ○ White: ~36.0%
  ○ Asian: ~43.7%
  ○ Black: ~16.8%
	Dietary Pattern(s):
	• Control: Received usual care and antenatal dietary advice as per U.K. national recommendations (Ref, n=625)
	• Intervention:
	  ○ High intake of nuts, EVOO, fruit, vegetables, nonrefined grains, and legumes
	  ○ Moderate to high consumption of fish
	  ○ Low to moderate intake of poultry and dairy products
	  ○ Low consumption of red meat and processed meat
		Significant:
		GWG (kg), P=0.03
		• Control: 8.3± 6.4
		• Intervention: 6.8± 5.6
		• aOR: −1.2 , 95% CI=(−2.2, -0.2)
		
		Non-significant:
			Key confounders accounted for:
			Age Race/ethnicity, Prepregnancy BMI, GDM, Parity
			
			Limitations:
			• Self-reported adherence
			• Dietary intake info for ~40% of participants; change in diet based on intervention reported only for a sub-set of the women that were originally recruited
			• Unclear how gestational weight gain was assessed and the window in which it was assessed

[x] ACOG: American College of Obstetricians and Gynecologists, AHEI: alternative healthy eating index, aOR: adjustd odds ration, aRR: adjusted risk ratio, BIGCS: Born in Guangzhou Cohort Study, BMI: body mass index, BW: birth weight, CI: confidence interval, d: day, DASH: Dietary Approaches to Stop Hypertension, DHQ: diet history questionnaire, DII: Dietary Inflammation Index, DP: dietary pattern, ESTEEM: Effect of Simple, Targeted Diet in Pregnant Women With Metabolic Risk Factors on Pregnancy Outcomes, EVOO: extra virgin olive oil, FFQ: food frequency questionnaire, g: gram(s), GDM: gestational diabetes mellitus, GWG: gestational weight gain, HEI: Healthy Eating Index, HFII: Healthy Food Intake Index, hr: hour, HTN: hypertension, IFPSII: Infant Feeding Practices Study II, INMA: INfancia y Medio Ambiente, IOM: Institute of Medicine, IQR: interquartile range, kcal: kilocalories, kg: kilogram(s), MDA: Mediterranean Diet Adherence, MDQS: Maternal Diet Quality Score, Med: Mediterranean, MET: metabolic equivalent of task, mo: month, MOMFIT: Maternal Offspring Metabolics Family Intervention Trial, MoBa: Mothers and Babies cohort, MUFA: monounsaturated fatty acid, NFFD: Norwegian Fit for Delivery, NHBCS: New Hampshire Birth Cohort Study, NHS: National Health Service, NND: New Nordic Diet, NR: not reported, NS: non-significant, OMCHS: Osaka Maternal and Child Health Study, OMNI: optimal macronutrient intake, OR: odds ratio, PA: physical activity, PCA: principal component analysis, PCS: prospective cohort study, PE: preeclampsia, PETALS: Pregnancy Environment and Lifestyle Study, PRINCESA: Pregnancy Research on Inflammation, Nutrition and City Environments: Systematic Analyses, PREWICE: PREgnant Women of Iceland, PUFA: polyunsaturated fatty acid, Q#: quartile, Ref: reference, RCT: randomized controlled trial, rMED: relative Mediterranean Diet, SD: standard deviation, SE: standard error, SECOST: Seremben Cohort Study, SES: socioeconomic status, SFA: saturated fatty acid, T#: tertile, wk: week(s), y: year(s)
[xi] ± indicates values of Mean± SD unless otherwise noted

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ Other: ~3.5% • Physical Activity (n=1205): MET: ~2,584 min/wk • Anthropometry: ○ Normal BMI: ~13.9% ○ Overweight: ~16.7% ○ Obese: ~69.4% • GDM: History: ~3.2% • Gestational HTN: History of PE: ~4.3% • Parity: ○ Primigravida: ~27.4% ○ Multigravida: ~72.6%	○ Avoidance of sugary drinks, fast food, and food rich in animal fat ○ Participants provided with 30 g/d of mixed nuts and 0.5 L/wk of EVOO (n=627) at ~18 wk gestation **Dietary assessment methods**: 24-hr recall used to identify changes needed in the intervention group to follow a Mediterranean-style pattern. Validated short questionnaire (ESTEEM Q) used to assess dietary intake at 20, 24, 28, 32, and 36wk **Outcome & assessment methods**: GWG: Methods NR		• Metabolically at risk participants, so the findings may not be generalizable • Weight gain was collapsed into one group and was not stratified by prepregnancy BMI **Summary:** A simple, individualized, Mediterranean-style DP supplemented with mixed nuts and EVOO moderately reduced GWG in metabolically at risk women.
Assaf-Balut, 2017[26]; Spain **RCT** Baseline N=1000 Analytic N=874 (Attrition: 13%) • Age: ~33.0 y • Race/Ethnicity: ○ Caucasian: 68.4% ○ Hispanic: 28.5% ○ Other: 3.1% • SES: • Education: ▪ Elementary: 8.8% ▪ Secondary: 39.8% ▪ University degree: 50.3% • Employed: 76.6%	**Dietary Pattern(s)**: • MedDiet: Recommended diet (servings) (Ref, n=440): ○ ≥2/d vegetables, ≥3/d fruit (avoiding juices), 3/d skimmed dairy products, 3/d wholegrain cereals, and 2-3/wk legumes ○ Moderate to high consumption of fish ○ Low consumption of red and processed meat, avoidance of refined grains, processed baked goods, pre-sliced bread, soft drinks and fresh juices, fast foods, and precooked meals ○ Recommended to walk ≥30 min/d for both groups ○ Advised to restrict consumption of dietary fat, including EVOO and nuts • MedDiet + EVOO and Pistachios (n=434): ○ In addition to MedDiet, recommended 40 mL/d EVOO and 25-30g/d pistachios;	**Significant**: GWG (kg) 12wk to 24–28wk gestation • Women with prepregnancy BMI <25, P=0.003 ○ MedDiet (n=330): 5.8± 2.7 ○ MedDiet + EVOO and Pistachios (n=329): 5.4± 2.2 • **Authors write: Overall GWG was significantly lower in EVOO and Pistachio group vs controls at 24–28 GW and at 36–38 GW (P = 0.022 and 0.037, respectively). At 24–28 GW, the GWG was significantly lower in all the three groups of women	**Key confounders accounted for:** Age, Race/ethnicity, SES, PA, Prepregnancy BMI, Smoking, GDM, HTN, Parity **Limitations**: • The findings reported in the table are inconsistent with what is reported in the text. • After GDM diagnosis (24-28wks), women in both intervention and control groups received treatment with insulin and/or diet. Thus, women in the control group diagnosed with GDM (103/440 (23.4%)) may have changed their diet post GDM-diagnosis. Note: there was increased olive oil intake in the control group (P-trend: 0.02). • Women in both groups received individualized recommendations based on

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

• Physical Activity: Score (Walking >5d/wk: Score 0: ≥30 min/d, +1: >60 min/d, -1: <30 min/d; Climbing stairs >5d/wk: Score 0: 4-16 floors/d, +1: >16 floors/d, -1: <4 floors/d): -1.4
• Anthropometry: Prepregnancy BMI: 23.1
• Smoking status: Current: 8.3%
• GDM:
  ○ GDM history: 2.8%
  ○ Family history of Type 2 DM: 25.2%
• Parity:
  ○ Primiparous: 44.3%
  ○ Second pregnancy: 32%
  ○ >2: 23.7%
	study provided 1L/wk EVOO and 150g/wk roasted pistachios throughout the pregnancy.
	at 12-14 wks
	
	Dietary assessment methods:
	Participants randomized to either MedDiet or MedDiet + EVOO and Pistachios at 8-12wk gestation
	
	Outcome & assessment methods:
	Pregestational body weight was self-reported and registered at 12-14 wks (Visit 1). Weight measured at each visit (1,2 and 3). GWG evaluated at 24–28 and 36–38wk gestation (in relation to weight at Visit 1).
		stratified by BMI (<25, 25–29.9 and ≥30).
		
		Non-significant:
		GWG (kg) 12wk to 24–28wk gestation
		• Total Sample, P=0.052
		  ○ MedDiet: 5.6± 2.8
		  ○ MedDiet + EVOO and Pistachios: 5.2± 2.5
		• Women with prepregnancy BMI 25–29.9, P=0.076
		  ○ MedDiet (n=88): 5.1± 3.0
		  ○ MedDiet + EVOO and Pistachios (n=85): 4.7 ± 3.4
		• Women with prepregnancy BMI ≥30,P= NS
		
		GWG (kg) 12wk to 36–38wk gestation
		• Total Sample, P=NS
		• Women with prepregnancy BMI <25, P=0.096
		  ○ MedDiet (n=300): 9.9± 3.9
		  ○ MedDiet + EVOO and Pistachios (n=329): 10.6± 4.0
		• Women with prepregnancy BMI 25–29.9, P=0.066
		  ○ MedDiet (n=88): 8.8± 4.5
		  ○ MedDiet + EVOO and Pistachios (n=85): 8.3± 6.5
			their first trimester BMI to reduce calorie content, when GWG goal is exceeded.
			
			Summary:
			Consuming a MedDiet with EVOO and Pistachios vs MedDiet alone resulted in less GWG at 24-28wk, particularly among women with prepregnancy BMI <25. There were no statistically signficant differences in GWG between groups at 36-38wk.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		Women with prepregnancy BMI ≥30, P=NS	

Assaf-Balut, 2019[23]; Spain
RCT
 	
Baseline N=1000 Analytic N=697
 	
• Age: ~33.0y
• Race/Ethnicity:
  ○ Caucasian: 67.5%
  ○ Hispanic: 29.7%
  ○ Other: 2.8%
• SES:
• Education:
  ▪ University degree: 50.8%
• Employed: 77.3%
• Physical Activity Score >0 (Walking >5d/wk: Score 0: ≥30 min/d, +1: >60 min/d, -1: <30 min/d; Climbing stairs >5d/wk: Score 0: 4-16 floors/d, +1: >16 floors/d, -1: <4 floors/d): 11.6%
• Anthropometry: Prepregnancy BMI: 22.6
• Smoking status: Current: 7.9%
• GDM:
  ○ GDM history: 2.2%
  ○ Family history of Type 2 DM: 4.2%
  ○ 0% GDM
• Parity:
  ○ Primiparous: 43.2%
  ○ Second pregnancy: 32.3%
  ○ >2: 24.5%
	Dietary Pattern(s):
	• MedDiet: Recommended diet (servings) (Ref, n=337):
	  ○ ≥2/d vegetables, ≥3/d fruit (avoiding juices), 3/d skimmed dairy products, 3/d wholegrain cereals, and 2-3/wk legumes
	  ○ Moderate to high consumption of fish
	  ○ Low consumption of red and processed meat, avoidance of refined grains, processed baked goods, pre-sliced bread, soft drinks and fresh juices, fast foods, and precooked meals
	  ○ Recommended to walk ≥30 min/d for both groups
	  ○ Advised to restrict consumption of dietary fat, including EVOO and nuts
	• MedDiet + EVOO and Pistachios (n=360):
	  ○ In addition to MedDiet, recommended 40 mL/d EVOO and 25-30g/d pistachios; study provided 1L/wk EVOO and 150g/wk roasted pistachios throughout the pregnancy.
	at 12-14 wks
	
	Dietary assessment methods:
	Participants randomized to either MedDiet or MedDiet + EVOO and Pistachios at 8-12wk gestation
	
	Outcome & assessment methods:
	Prepregnancy weight self-reported at baseline (12-14wk gestation). Weight
		Significant:
		
		Non-significant:
		GWG (kg) 12wk to 36–38wk gestation, P=NS
		• MedDiet (n=337): 10.29± 3.97
		• MedDiet + EVOO and Pistachios (n=360): 10.68± 4.63
		
		GWG adequacy, P=NS
		• Excessive
		  ○ MedDiet (n=337): 26.7%
		  ○ MedDiet + EVOO and Pistachios (n=360): 27.5%
		• Adequate
		  ○ MedDiet (n=337): 70.9%
		  ○ MedDiet + EVOO and Pistachios (n=360): 69.2%
		• Inadequate
		  ○ MedDiet (n=337): 2.4%
		  ○ MedDiet + EVOO and Pistachios (n=360): 3.3%
			Key confounders accounted for:
			Age, Race/ethnicity, SES, PA, Prepregnancy BMI, Smoking, GDM, Parity
			
			Limitations:
			• Women in both groups received individualized recommendations based on their first trimester BMI to reduce calorie content, when GWG goal is exceeded.
			• Risk of selective reporting
			
			Summary:
			Consuming a MedDiet with EVOO and Pistachios vs MedDiet alone resulted in no difference in GWG or GWG adequacy, particularly among normoglycemic women.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	evaluated at 12–14, 24–28 and 36–38wks (or last weight recorded before delivery). GWG reported at 36-38wk in relation to baseline. Adequate GWG defined according to prepregnancy BMI: <25: 9 kg, 25–29: 9.6 kg, 30–34.9: 3 kg, and ≥35: 0 kg. Weight gain 3 kg below designated target categorized as insufficient. Weight gain 3 kg above designated target categorized as excessive.		

Van Horn, 2018[25]; U.S.
RCT, MOMFIT
 	
Baseline N=281 Analytic N=280 (Attrition: 0%)
 	
• Age: ~33.6y
• Race/Ethnicity:
  ○ Hispanic: ~21.4%
  ○ White: ~63.3%
  ○ Black/African American: ~19.2%
  ○ Other: ~17.4%
• SES:
  ○ Education:
    ▪ ≤High school diploma/GED: ~4.6%
    ▪ 1−3 years' college: ~15.7%
    ▪ College degree: ~39.1%
    ▪ Postgraduate work: ~40.2%
  ○ Marital status:
    ▪ Married: ~83.3%
    ▪ Living with significant other: 9.6%
    ▪ Not married: ~7.1%
  ○ Total family income:
    ▪ <$20,000: ~4.6%
    ▪ ≥$200,000: ~17.4%
• Physical Activity (Median time/wk):
	Dietary Pattern(s):
	• Control: Received usual-care, including biweekly newsletters and publicly available maternity website links via email (Ref, n=140)
	• Intervention: Mama-DASH diet
	  ○ Encouraged low-fat dairy products, fish, skinless poultry, lean meat and vegetable protein, unsaturated fats, fiber-rich whole grains, fruits, vegetables, and legumes
	  ○ Discouraged sugar-sweetened beverages, sweets, and non-nutrient-dense snack foods
	  ○ Calorically suited to restricted GWG recommendations and followed nutrition guidelines for pregnant women, including avoidance of fish considered higher in mercury, inclusion of calcium-rich, vitamin D−enriched dairy, or calcium-fortified non-dairy products
	  ○ Received 3 individual and 6 group diet and physical activity counseling sessions by phone and webinar (n=140)
	    at 15wk gestation
	
	Dietary assessment methods:
		Significant:
		GWG (kg), P=0.02
		• Control: 12± 6
		• Intervention: 10± 6
		
		Exceeded GWG guidelines, P=0.004
		• Control: 84.4%
		• Intervention: 68.6%
		
		GWG (kg), P=0.01
		• Prepregnancy BMI >30
		  ○ Control: 26± 14
		  ○ Intervention: 20± 12
		
		Exceeded GWG guidelines, P=0.001
		• Prepregnancy BMI >30
		  ○ Control: 83%
		  ○ Intervention: 60%
		
		Non-significant:
			Key confounders accounted for:
			Age, Race/ethnicity, Prepregnancy BMI
			
			Limitations:
			• Self-reported diet and exercise
			• Lower adherence to intervention than expected
			• Analyses differ between protocol and publication
			
			Summary:
			The MOMFIT intervention, including adherence to the Mama-DASH DP, significantly reduced GWG in obese women.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ Moderate activities (3-6 METs): ~4.5 hr ○ Vigorous activities (7-12 METs): ~0.55 hr • Anthropometry: ○ Prepregnancy BMI: ~31 ○ Prepregnancy obesity: ~54.8% • Smoking status: 0% • Parity: Nulliparous: 47.0% • Sleep duration >7 hrs: ~50.5%	Two self-reported 24-hour recalls collected prior to randomization and at 35wks using the ASA24 system. Nutrient and food group intakes averaged at each time point with and without vitamin/mineral supplements, and then further averaged for group means by randomization status. Adherence to DASH diet scored 0-9 and 8-40 using different methodologies. Diet quality also assessed using the HEI-2010, with scores ranging from 0-100. All participants received the 2008 Physical Activity Guidelines for Americans and recommendations from the ACOG. **Outcome & assessment methods**: GWG calculated as difference between self-reported prepregnancy weight and weight measured by blinded, trained staff at 35wk (weight closest to this time extracted from clinic charts or taken from previous study visits if no 35wk measure available). GWG adequcy determined by IOM 2009 recommendations.	GWG (kg), stratified by prepregnancy BMI, Median (IQR), P=0.49 • Prepregnancy BMI >25-30, P=NS Exceeded GWG guidelines, Median (IQR), P=0.33 Prepregnancy BMI Overweight, P=NS	
Prospective Cohort Studies			
Factor Analysis and PCA			
Maugeri, 2019[19]; Italy **PCS, Mamma & Bambino** Baseline N=232 Analytic N=232 (Attrition: 0%)	**Dietary Pattern(s)**: • Prudent dietary pattern characterized by a high intake of boiled potatoes, cooked vegetables, legumes, pizza and soup • Western dietary pattern characterized by high intake of red meat, fries, dipping sauces, salty snacks and alcoholic drinks.	**Significant**: GWG (kg), All women: • Western Diet ○ T1: Ref ○ Trend T1 to T3: β=1.217, SE=0.487, P=0.013	**Key confounders accounted for:** Age, SES, Smoking, GDM, HTN, Parity **Limitations**: • Accounted for total energy intake

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

• Median Age: ~37.3y
• Race/Ethnicity: NR
• SES:
  ○ ≤8y of school: ~19.4%
  ○ Working: ~58.3%
• Anthropometry: Prepregnancy BMI: ~22.6
• Smoking status: ~18.1%
• GDM: 0%
• Gestational HTN: 0%
	at ~16wk gestation
	
	Dietary assessment methods:
	Dietary assessment performed at ~16wk gestation using a validated 95-item semi-quantitative FFQ, which referred to the previous month. Items from the FFQ were classified into 39 predefined food groups using PCA
	
	Outcome & assessment methods:
	GWG (kg) calculated by subtracting self-reported prepregnancy weight from weight measured at delivery
		GWG (kg), Prepregnancy BMI Underweight
		• Prudent Diet
		  ○ Trend T1 to T3: β= 4.127, SE=1.722, P=0.048
		
		GWG (kg), Prepregnancy BMI Overweight
		• Prudent Diet
		  ○ T1: Ref
		  ○ T2: β= −7.975, SE=2.672, P=0.010
		  ○ T3: β= −9.736, SE=4.302, P=0.037
		  ○ Trend T1 to T3: β= −4.209, SE=1.635, P=0.016
		
		GWG (kg), Prepregnancy BMI Obese
		• Prudent Diet
		  ○ Trend T1 to T3: β= −7.356, SE=2.304, P=0.031
		• Western Diet
		  ○ T1: Ref
		  ○ T3: β=13.701, SE=0.887, P=0.041
		  ○ Trend T1 to T3: β=7.363, SE=1.808, P=0.005
		
		Non-significant:
		GWG (kg), All women, P=0.830
		• Prudent Diet, P=NS
			• Could not investigate the effect of DP on GWG trajectories
			• Limited sample size in underweight and obese groups
			• PCA-derived dietary patterns only explained 15.55% of total variance among food groups
			• Selection into the analysis was related to exposure and outcome and not adjusted for in the analysis; Start of follow up and exposure did not coincide and a potentially important amount of follow-up time is missing from analyses
			• Dietary data reflected first trimester intake, when mothers may have been prone to morning sickness
			• Outcome measure was subjective and assessed by participants
			• No pre-registered data analysis plan
			
			Summary:
			Adherence to a Western DP is positively associated with GWG, especially among obese women. Adherence to a prudent DP is positively associated with GWG among underweight women and negatively associated with GWG among overweight and obese women.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		• Western Diet, Median (IQR), P=0.056 ○ T1: 11.5 (7.2) ○ T2: 13.0 (7.0) ○ T3: 13.0 (9.0) GWG Adequacy • Prudent Diet, P=0.823 ○ No difference in the prevalence of inadequate, adequate, and excessive GWG among tertiles of adherence • Western Diet, P=0.162 ○ No difference in the prevalence of inadequate, adequate, and excessive GWG among tertiles of adherence GWG (kg) among all women, and those with Prepregnancy underweight or normal weight: • Prudent Diet ○ No association with T2 or T3 (vs T1) adherence and GWG, and no significant trend. • Western Diet ○ No association with T2 or T3 (vs T1) adherence and GWG, and no significant trend.	

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		GWG (kg), Prepregnancy BMI Overweight • Western Diet ○ No association with T2 or T3 (vs T1) adherence and GWG, and no significant trend. GWG (kg), Prepregnancy BMI Obese • Prudent Diet ○ T1: Ref ○ T2 vs T1, P=NS ○ T3: β= −10.730, SE=4.156, P=0.061 • Western Diet ○ T1: Ref ○ T2 vs T1, P=NS	
Okubo, 2012[3]; Japan **PCS, OMCHS** Baseline N=803 Analytic N=803 (Attrition: 0%) • Age: ○ <29y: ~37.1% ○ 29-31y: ~30.4% ○ ≥32y: ~32.5% • Race/Ethnicity: NR • SES: ○ Education:	**Dietary Pattern(s)**: • Meat and eggs pattern: high intake of beef and pork, processed meat, chicken, eggs, butter and dairy products (n=326) • Wheat products pattern: high intake of bread, confectioneries, fruit and vegetable juice, and soft drinks (n=303) • Rice, fish, and vegetables pattern: high intake of rice, potatoes, nuts, pulses, fruits, green and yellow vegetables, white vegetables, mushrooms, seaweeds, Japanese and Chinese tea, fish, shellfish, sea products, miso soup and salt-containing seasoning (n=174)	**Significant**: GWG (kg), Mean (95% CI), P=0.01 • Meat and eggs: 10.0 (9.7, 10.3) • Wheat products: 10.2 (9.8, 10.6) • Rice, fish and vegetables: 9.3 (8.8, 9.7) ○ Meat and eggs vs. wheat products: NS ○ Meat and eggs vs. rice, fish and veg.: NS	**Key confounders accounted for:** None **Limitations**: • Questionnaire not validated in pregnant women and may not reflect total food and nutrient intake • Self-administered questionnaire used to assess potential confounders were developed for this study not validated • Self-reported outcome data collected 2-9 mo postpartum • Supplement intake: Sig higher in rice, fish and vegetables (~29% vs. ~19% in other groups)

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
▪ <13y: ~28.8% ▪ 13-14y: ~42.8% ▪ ≥15y: ~28.4% ○ Household income (yen/y): ▪ <4,000,000: ~28.6% ▪ ≥6,000,000: ~31.1% • Anthropometry: Prepregnancy BMI: ~20.2 • Parity: ≥1: ~51.7% • Smoking: ○ Never: ~71.6% ○ Former: ~12.2% ○ Current: ~16.2% • Physical Activity: ○ Low: ~58.9% ○ Moderate or High: ~41.1%	at ~18.0wk, Range: 5 to 39wk gestation **Dietary assessment methods**: Self-administered, comprehensive, 150-item diet history questionnaire (DHQ), validated in Japanese men and women (not specifically pregnant women) (see Sasaki, 2000 and Sasaki, 1998) Patterns identified by K-means cluster analysis **Outcome & assessment methods**: Maternal weight gain was obtained using a survey collected 2-9 mo postpartum	○ Wheat vs. rice, fish and veg: P<0.05 **Non-significant**:	• Follow-up time varied (potentially widely) across participants • Important co-exposures imbalanced across groups and could have likely to impacted the outcome • Missingness by exposure NR • No pre-registered data analysis plan **Summary:** Adherence to a wheat products dietary patterns was associated with significantly greater weight gain when compared to rice, fish, and vegetables DPs
Tielemans, 2015[8]; Netherlands **PCS, Generation R Study** Baseline N=3374 Analytic N=2748 (Attrition: 33%) Women excluded due to missing diet data (n = 538), weight data (n=5), multiple pregnancy (n=53), induced abortion (n=8), intrauterine fetal death (n=16), loss-to-follow up (n=3), prepregnancy underweight (n = 100), leaving 3374 women for the current analysis. n=3374 for participant characteristics • Age: ~31.3y	**Dietary Pattern(s)**: • Vegetable, Oil and Fish Pattern: higher intake of vegetables, high fat dairy products, cereals (both low and high fiber), fish and shellfish, eggs and egg products, vegetable oils, coffee and tea, alcoholic beverages and legumes • Nuts, High-Fiber Cereals and Soy Pattern: higher intake of potatoes and other tubers, fruits, high and low fat dairy products, high fiber cereals, meat and meat products, fish and shellfish, coffee and tea, sugar-containing beverages, light soft drinks, nuts, seeds and olives, and soy products • Margarine, Sugar and Snacks Pattern: higher intake of potatoes and other tubers, high fat dairy products, low and high fiber cereals, meat and meat products,	**Significant**: Weekly GWG adequacy • Inadequate (n=437, Ref: Adequate, n=753) ○ Margarine, Sugar, and Snacks Pattern Q4 vs Q1: OR=1.49, 95% CI=(1.05, 2.11) • Excessive (n=1555, Ref: Adequate, n=753) ○ Margarine, Sugar, and Snacks Pattern Q4 vs Q1: OR=1.32, 95% CI=(1.01, 1.720 **Non-significant**:	**Key confounders accounted for:** Age, Race/ethnicity, SES, Prepregnancy BMI, Smoking, Parity **Limitations**: • Accounted for total energy intake • Start of follow up and start of exposure did not coincide • Self-reported diet, prepregnancy weight, and maximum pregnancy weight • No pre-registered data analysis plan **Summary:** None of the a posteriori-derived DPs were associated with GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
• Race/Ethnicity: 100% of Dutch ancestry • SES: ○ Education: ▪ Low and midlow: ~18.2% ▪ Midhigh: ~51.5% ▪ High: ~30.4% ○ Household income <2200 Euro/mo: ~28.3% • Anthropometry: Prepregnancy BMI: ~24.7 • Smoking status: ○ Never in pregnancy: ~74.4% ○ Until pregnancy known: ~8.3% ○ During pregnancy: ~17.4% • Parity: ○ 0: ~59.8% ○ ≥1: ~40.2% • Alcohol: ○ Never in pregnancy: ~36.6% ○ Until pregnancy known: ~16.5% ○ During pregnancy: ~46.9%	margarine and butter, sugar and confectionary and cakes, snacks, sugar-containing beverages, condiments and sauces, nuts, seeds and olives at ~13.4wk gestation Higher adherence to each pattern indicates a diet characterized by higher intake of those food groups. **Dietary assessment methods**: Dietary intake assessed at ~13.4wk gestation using a validated, 293-item FFQ that covered dietary intake over the previous 3 months. A posteriori-derived dietary patterns identified using PCA with Varimax rotation. Adherence scores for each participant and each pattern calculated by individual sum of the intake of the 23 food groups, weighted with their factor loadings and standardizing those weighted sums to have mean zero and standard deviation one. **Outcome & assessment methods**: Self-reported prepregnancy weight collected at enrollment. Staff measured weight at 3 study visits: ~12.9wk (first visit), ~20.4wk (second visit), and ~30.2wk (third visit). At 6wk postpartum, women self-reported maximum weight during pregnancy. GWG in different phases of pregnancy was calculated mid-pregnancy GWG (weight at the second visit minus weight the first visit, divided by follow-up duration (g/week), n = 2748), late-pregnancy GWG (weight at the third visit minus weight at the second visit,	Mid-Pregnancy Weight Gain (g/wk) • Prepregnancy Normal Weight (n=2079) ○ Vegetable, Oil, and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS ○ Margarine, Sugar and Snacks Pattern, P=NS • Prepregnancy Overweight Women (n=669) ○ Vegetable, Oil, and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS ○ Margarine, Sugar and Snacks Pattern, P=NS Late-Pregnancy Weight Gain (g/wk) • Prepregnancy Normal Weight Women (n=2384) ○ Vegetable, Oil, and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy, P=NS ○ Margarine, Sugar and Snacks Pattern, P=NS • Prepregnancy Overweight Women (n=774)	

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	divided by follow-up duration (g/week), n = 3158), and GWG until early-third trimester (weight at the third visit minus prepregnancy weight, divided by follow up duration (g/week), n = 2815). Women's total GWG (maximum pregnancy weight minus prepregnancy weight, n = 1917) and GWG rate between visits 1 and 3 was used to classify their GWG into inadequate, adequate, or excessive GWG according to IOM (2009) recommendations.	○ Vegetable, Oil, and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy, P=NS ○ Margarine, Sugar and Snacks Pattern, P=NS GWG adequacy: • Inadequate GWG (n=459, Ref: Adequate, n=632) ○ Vegetable, Oil and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS ○ Margarine, Sugar and Snacks Pattern, P=NS • Excessive GWG (n=826, Ref: Adequate, n=632) ○ Vegetable, Oil and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS ○ Margarine, Sugar and Snacks Pattern, P=NS Weekly GWG adequacy • Inadequate (n=437, Ref: Adequate, n=753) ○ Vegetable, Oil, and Fish Pattern, P=NS per SD increase in DP score	

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS ○ Margarine, Sugar, and Snacks Pattern, P=NS • Excessive (n=1555, Ref: Adequate. N=753) ○ Vegetable, Oil, and Fish Pattern, P=NS per SD increase in DP score ○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS Margarine, Sugar, and Snacks Pattern, P=NS	
Tielemans, 2015 continued		**Significant**: Sensitivity Analysis (excludes women with GDM or hypertensive disorders of pregnancy) GWG until early-third trimester (g/wk) • Prepregnancy Normal Weight Women (n=1937) ○ Vegetable, Oil and Fish Pattern, P<0.01 per SD increase in DP score ▪ Q1: Ref ▪ Q2: β=20, 95% CI: (3, 36), P<0.05 ▪ Q3: β=7, 95% CI: (−10, 23) ▪ Q4: β=27, 95% CI: (11, 44), P<0.05 **Non-significant**:	**Key confounders accounted for:** Age, Race/ethnicity, SES, Prepregnancy BMI, Smoking, GDM, HTN, Parity **Summary:** Among women with normal prepregnancy weight, higher adherence to the Vegetable, Oil and Fish Pattern was associated with greater GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

		Sensitivity Analysis (excludes women with GDM or hypertensive disorders of pregnancy)
		
		GWG until early-third trimester (g/wk)
		• Prepregnancy Normal Weight Women (n=1937)
		  ○ Nuts, High-Fiber Cereals and Soy, P=NS per SD increase in DP score
		  ○ Margarine, Sugar, and Snacks, P=NS
		• Prepregnancy Overweight Women (n=532)
		  ○ Vegetable, Oil and Fish Pattern, P=NS per SD increase in DP score
		  ○ Nuts, High-Fiber Cereals and Soy Pattern, P=NS
		  ○ Margarine, Sugar and Snacks Pattern, P=NS	

Wei, 2019[15]; China **PCS, BIGCS** Baseline N=5,733 Analytic N=5,733 • Age: ~29.1y • Race/Ethnicity: NR • SES: ○ Educational level:	**Dietary Pattern(s)**: Six dietary patterns were generated according to the food groups predominant in each cluster. • Cereals (n=872) • Vegetables (n=1147) • Meats (n=927) • Fruits (n=640) • Fish, beans, nuts, and yogurt (n=1130) • Milk and milk powder (n=817)	**Significant**: GWG (kg), P=0.007 • Cereals: Ref • Fruits: β=0.592, 95% CI: (0.166, 1.018) GWG rate (kg/wk), P=0.007 • Cereals: Ref	**Key confounders accounted for:** Age, SES, Prepregnancy BMI, Parity **Limitations**: • Food quantity and portion size not documented in the FFQ • Adjusted for post-exposure variables • Selection into analysis related to outcome

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
▪ High school or below: 8.0% ▪ Vocational/technical college: 23.6% ▪ Undergraduate: 55.5% ▪ Postgraduate: 12.9% ○ Income (Yuan/mo; n=5605): ▪ ≤1500: 9.3% ▪ ≥9001: 16.9% • Anthropometry: Prepregnancy BMI: 20.4± 2.6 • Smoker: 29.7% • Parity: Primiparous: 88.2%	at 24-27wk gestation **Dietary assessment methods**: A validated, 64-item FFQ used to assess diet Individual food items were combined into 30 groups by similar nutrient profile or culinary use. Contribution (%) of every food group was calculated for each participant. Cluster analysis with K-means method was conducted to generate six dietary patterns based on foods highly consumed and distribution of foods within clusters. **Outcome & assessment methods**: Prepregnancy weight self-reported, while weight during pregnancy extracted from medical records. Total GWG (kg) calculated as difference in weight between prepregnancy and delivery. Total GWG rate (kg/wk) calculated by dividing total GWG by total gestational wks. Second trimester GWG rate (kg/wk) calculated as difference in weight before 28wk and weight after 13wk, divided by wks between the two measures. Third trimester GWG rate (kg/wk) calculated as difference between pre-delivery weight and weight at 28wk, divided by wks between the two measures.	• Fruits: β=0.015, 95% CI: (0.004, 0.026) Second Trimester GWG rate (kg/wk), P<0.05 • Cereals: Ref, n=821 • Fish, beans, nuts, and yogurt: β=0.024, 95% CI: (0.001, 0.048), n=658 GWG adequacy • Inadequate GWG ○ Cereals: Ref ○ Fish, beans, nuts, and yogurt: OR=0.797, 95% CI: (0.638, 0.997) • Excessive GWG ○ Cereals: Ref ○ Fruits: OR=1.393, 95% CI: (1.101, 1.763) **Non-significant**: GWG (kg), P=NS • Cereals: Ref • Vegetables • Meats • Fish, beans, nuts, and yogurt: β=0.341, 95% CI: (-0.017, 0.699), P=0.062 • Milk and milk powder GWG rate (kg/wk), P=NS	• Start of follow up and exposure did not coincide and a potentially important amount of follow-up time is missing from analyses • Proportions of missing participants differed substantially across exposure groups and was not accounted for in the analyses • No pre-registered data analysis plan • High risk of selective reporting from among multiple analyses **Summary:** Among Chinese pregnant women with healthy BMI, the dietary pattern richer in fruits was positively associated with total GWG, GWG rate, and an increased risk for excessive GWG. The richer in fish, beans, nuts and yogurt pattern was positively associated with GWG rate in the second trimester and related to a reduced risk for inadequate GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		• Cereals: Ref • Vegetables: • Meats: • Fish, beans, nuts, and yogurt: β=0.009, 95% CI: (0.000, 0.018), P=0.060 • Milk and milk powder Second Trimester GWG rate (kg/wk), P=NS • Cereals: Ref, n=821 • Vegetables: n=682 • Meats: n=493 • Fruits: n=968 • Milk and milk powder: n=645 Third Trimester GWG rate (kg/wk) , P=NS • Cereals: Ref, n=830 • Vegetables: n=708 • Meats: n=517 • Fruits: n=993 • Fish, beans, nuts, and yogurt: n=679 • Milk and milk powder: n=669 GWG adequacy (Ref: Adequate GWG, Cereals DP) , P=NS • Inadequate • Excessive	

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
Wei, 2019 continued		**Significant**: GWG (kg), P<0.01 • Cereals: 14.5± 4.3 • Vegetables: 14.5± 4.4 • Meats: 14.3± 4.3 • Fruits: 15.1± 4.4 • Fish, beans, nuts, and yogurt: 14.7± 4.1 • Milk and milk powder: 14.6 ± 4.4 GWG rate (kg/wk), P=0.01 • Cereals: 0.37± 0.11 • Vegetables: 0.37± 0.1 • Meats: 0.39± 0.11 • Fruits: 0.38± 0.10 • Fish, beans, nuts, and yogurt: 0.38± 0.11 • Milk and milk powder: 0.37± 0.11 GWG Adequacy, P<0.01 • Cereals: o Inadequate: 23.5% o Adequate: 47.6% o Excessive: 28.9% • Vegetables: o Inadequate: 23.6% o Adequate: 44.9% o Excessive: 31.5% • Meats: o Inadequate: 22.4%	**Key confounders accounted for:** None **Summary:** Among Chinese pregnant women with healthy BMI, the dietary pattern richer in fruits was positively associated with total GWG, GWG rate, and an increased risk for excessive GWG. The richer in fish, beans, nuts and yogurt pattern was positively associated with GWG rate in the second trimester and related to a reduced risk for inadequate GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		○ Adequate: 49.9% ○ Excessive: 27.6% • Fruits: ○ Inadequate: 19.2% ○ Adequate: 43.6% ○ Excessive: 37.2% • Fish, beans, nuts, and yogurt: ○ Inadequate: 19.6% ○ Adequate: 48.9% ○ Excessive: 31.5% • Milk and milk powder: ○ Inadequate: 20.2% ○ Adequate: 46.9% ○ Excessive: 32.9%	
Wesolowska, 2019[17]; Poland **PCS** Baseline N=1306 Analytic N=1158 (Attrition: 34%) N=1306 for participant characteristics • Age: 17-30y: ~65.2%, >30y: ~34.8% • Race/Ethnicity: NR • SES: ○ Marital Status: Married: ~80.0% ○ Education: ▪ ≤9y: ~2.3% ▪ 10-12y: ~27.9% ▪ >12y: ~69.8% ○ SES:	**Dietary Pattern(s)**: • Western: High intake of refined grains, processed meat, potatoes, and low intake of whole grains • Mixed: Intakes in between Western and Prudent • Prudent: High consumption of fruits, vegetables, legumes, whole grains, poultry, and low-fat and high-fat dairy products at 20-24wk gestation **Dietary assessment methods**: Modified version of validated FFQ administered by trained personnel at 20-24wks gestation. Food items grouped into 14	**Significant**: **Non-significant**: GWG Adequacy (Pearson's chi squared test across all GWG and diet categories), P=NS	**Key confounders accounted for:** None **Limitations**: • Selection into the study related to exposure and outcome • Some missing outcome data, reasons NR • Unclear if outcome was self-reported or assessed objectively. Start of follow up and exposure did not coincide and a potentially important amount of follow-up time was missing from analyses • Important co-exposures not balanced across groups that were likely to impact the outcome,

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
▪ Low: ~7.4% ▪ Middle: ~67.9% ▪ High: ~24.7% • Physical Activity: Yes: ~68.8% • Anthropometry: Prepregnancy BMI: ○ <18.5: ~8.9% ○ 18.5-24.99: ~72.6% ○ ≥25: ~18.6% • Smoking status: Cotinine level >10 ng/mL: ~11.1% • Parity: ○ 0: ~52.0% ○ ≥1: ~48.0% • Alcohol consumption: ~6.4% • Perceived Stress Scale (0-38 pts): ≥17 points (higher stress): ~52.6%	predefined food groups: Refined grains, Whole grains, Low–fat dairy, High–fat dairy, Butter, Red meat, Poultry, Processed meat, Fish/Seafood, Fruits, Vegetables, Potatoes, Legumes, Sweets. 3 dietary patterns derived using exploratory factor analysis. **Outcome & assessment methods**: GWG calculated as difference between latest weight before delivery and prepregnancy weight. GWG adequacy determined by IOM 2009 recommendations.		and no adjustment techniques were used to correct for the issues • No information on how weight was measured • No pre-registered data analysis plan **Summary:** No association was found between GWG and Western, Mixed, or Prudent dietary patterns during pregnancy.
Index/Score			
Ancira-Moreno, 2019[18]; Mexico **PCS, PRINCESA** Baseline N=660 Analytic N=660 (Attrition: 0%) • Age: ~24.9y • Race/Ethnicity: NR • SES: ○ Married/partnered: ~73.9% ○ >9y education: ~14.2% • Anthropometry: Prepregnancy BMI: ~25.7 • GDM: 0% • Gestational HTN: 0% • Parity: ○ Nulliparous: ~48.0%	**Dietary Pattern(s)**: Maternal Diet Quality Score (MDQS) based on Mexican Dietary Guidelines and international recommendations for specific foods and nutrients. • Low adherence (Score 0-2) • Medium adherence (Score 3-4) • High adherence (Score ≥5) Higher adherence characterized by: • PUFAS >6% of energy intake • Added sugars <10% of energy intake • Fruits and vegetables >400 g/d • Red meat <500 g/wk • 2 servings/d low fat dairy products • 2 servings/d legumes • Foods high in SFAs or added sugar <10% of energy intake	**Significant**: GWG rate (kg/wk) • Middle pregnancy (≥20 and <30wk) ○ Low: Ref ○ Medium: β= -0.0266, 95% CI: (-0.0496, -0.0037), P=0.023 • Late pregnancy (30-40wk) ○ Low: Ref ○ Medium: β=0.0256, 95% CI: (0.0077, 0.0436), P=0.005 ○ High: β=0.0472, 95% CI: (0.0222, 0.0723), P<0.001	**Key confounders accounted for:** Age, SES, PA, Prepregnancy BMI, GDM, HTN, Parity **Limitations**: • Accounted for total energy intake • Lack of weight measurement at each visit • Recall bias and other biases related to a priori DP; could not capture day-to-day variability in dietary intake • Participants who developed HTN or GDM excluded from final analysis • Selection into analysis related to exposure and outcome and not adjusted for • Start of follow up and exposure do not coincide and a potentially important amount of follow-up time missing from analyses

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ 1-2: ~28.3% ○ ≥3: ~23.3% • Term birth: ~88.0%	early-mid pregnancy (0-20 wk), middle pregnancy (≥20 and <30wk), late pregnancy (30-40wk), and prolonged pregnancy (≥40wk) **Dietary assessment methods**: Dietitian collected data on maternal diet via a multiple-step 24-h dietary recall at each prenatal visit. Value of 1 assigned if recommendation met and 0 if recommendation not met. Values summed with maximum score of 7 and minimum score of 0. Three categories of adherence defined: low (0-2 points), medium (3-4 points), and high (≥5 points). **Outcome & assessment methods**: Weight measured at first and consecutive visits by trained staff using standardized methods. Prepregnancy weight self-reported. Rate of GWG (kg/wk) calculated as weight at current visit minus weight from previous visit, divided by follow-up duration. First GWG rate estimated using prepregnancy weight. Adequacy of GWG rate based on IOM (2009) recommendations.	• Prolonged pregnancy (≥40wk) • Low: Ref • High: β=-0.182, 95% CI: (-0.360, -0.00450), P=0.044 GWG rate adequacy • Inadequate ○ Low: Ref ○ Medium: OR=0.742, 95% CI: (0.555, 0.991), P=0.044 ○ High: OR=0.630, 95% CI: (0.417, 0.953), P=0.031 • Excessive ○ Low: Ref ○ High: OR=0.623, 95% CI: (0.411, 0.942), P=0.025 GWG rate adequacy, Prepregnancy BMI <25 • Inadequate ○ Low: Ref ○ Medium: OR=0.426, 95% CI: (0.184, 0.985), P=0.046 ○ High: OR=0.295, 95% CI: (0.092, 0.946), P=0.040 • Excessive ○ Low: Ref ○ Medium: OR=0.347, 95% CI: (0.126, 0.952), P=0.040	• Multiple 24HR recalls collected, but unclear if analysis was cross-sectional • No pre-registered data analysis plan • High risk of selective reporting from among multiple analyses • Baseline differences in maternal age and education **Summary:** Higher adherence to maternal dietary quality recommendations was protective against inadequate and excessive GWG throughout pregnancy, associated with slower GWG in middle and prolonged late pregnancy, and associated with a faster GWG in early and late pregnancy.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		○ High: OR=0.242, 95% CI: (0.059, 0.989), P=0.048 GWG rate adequacy, Prepregnancy BMI ≥25 • Inadequate ○ Low: Ref ○ Medium: OR=0.095, 95% CI: (0.010, 0.906), P=0.044 ○ High: OR= 0.033, 95% CI: (0.002, 0.442), P=0.010 • Excessive ○ Low: Ref ○ Medium: OR= 0.084, 95% CI: (0.126, 0.918), P=0.042 ○ High: OR=0.077, 95% CI: (0.059, 0.999), P=0.05 **Non-significant**: GWG rate (kg/wk) • Early-mid pregnancy (0-20wk) ○ Low: Ref ○ Medium: β=0.0162, 95% CI: (-0.0005, 0.0333), P=0.058 ○ High, P=NS • Middle pregnancy (≥20 and <30wk) ○ Low: Ref	

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
		○ High: β= -0.0363, 95% CI: (-0.076, 0.0037), P=0.076 • Prolonged pregnancy (≥40wk) ○ Low: Ref ○ Medium, P=NS GWG rate adequacy: • Excessive ○ Low: Ref ○ Medium: OR=0.773, 95% CI: (0.572, 1.044), P=0.094	
Emond, 2018[13]; U.S. **PCS, NHBCS** Baseline N=1140 Analytic N=862 Participants excluded due to unrealistic/missing dietary data (n=64), missing key covariates (n=89), underweight prepregnancy BMI (n=20), incomplete/ unrealistic infant birth data (n=62), or missing urinary arsenic data (n=43) N=862 for all participant characteristics • Age: ~31.2y • Race/Ethnicity: White, non-Hispanic: 96.8% • SES: ○ High school graduate or less: 26.8%	**Dietary Pattern(s)**: Adherence to AHEI-2010 diet, by quartile • Q1: n=215 • Q2: n=215 • Q3: n=216 • Q4: Highest intake of fruits, vegetables, whole grains, nuts and legumes, long-chain n–3 FAs, and PUFAs; Lowest intake of sugar-sweetened beverages and fruit juice, red and processed meats, trans fatty acids, and sodium (n=216) at 24-28wk gestation **Dietary assessment methods**: Women completed a validated FFQ at 24–28wk gestation), reflecting usual dietary intake during pregnancy. Diet quality assessed as adherence to a modified AHEI-2010 for pregnant women, including 10 dietary components: 6 healthful	**Significant**: **Non-significant**: • GWG Adequacy, P=NS ○ Insufficient GWG ○ Adequate GWG ○ Excessive GWG	**Key confounders accounted for:** None **Limitations**: • Power analysis NR for this secondary analysis • Selection into study may have been related to exposure and outcome, without adjustment • Self-reported exposure & prepregnancy BMI • Unclear sample size at enrollment • No preregistered data analysis plan • Baseline imbalances in multiple key confounders • No correction for multiple comparisons **Summary:** Adherence to the AHEI-2010 diet at 24-28wk gestation was not associated with GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ Some college: 24.1% ○ College graduate or more: 49.1% • Physical Activity: Regular exercise during pregnancy: 60.6% • Anthropometry: Prepregnancy BMI: ○ 18.5-24.9: 54.5% ○ 25.0-29.9: 26.3% ○ ≥30: 19.3% • Smoking status: Smoker: 5.5% • GDM: 7.1% ○ History of DM: 5.9% • Gestational HTN: PE: 6.7% ○ History of HTN: 1.9% • Parity: Nulliparous: 41.0%	components to encourage (vegetables, fruits, whole grains, nuts/legumes, long-chain n–3 FAs from foods and supplements, polyunsaturated fats) and 4 components to reduce (sugary beverages, red and processed meats, trans fatty acids, and sodium). All components are scored from 0 to 10 for a total score of 0-100 such that a higher score indicates a healthier intake. **Outcome & assessment methods**: GWG computed using self-reported prepregnancy weight and the last recorded prenatal weight from prenatal medical records. Adequacy of GWG defined according to IOM 2009 recommendations.		
Fernández-Barrés, 2019[1]; Spain **PCS, INMA** Baseline N=2195 Analytic N=2127 Participants excluded from analysis if no dietary data at 3rd trimester (n = 319) or no BMI measured (n = 248); Those lost to follow-up were younger, smoked more, and had lower socioeconomic and education levels. • Age: 30.9y • Race/Ethnicity: NR • SES: ○ Social class: ▪ I+II: ~23.2%	**Dietary Pattern(s)**: • Adherence to Relative Mediterranean Diet (rMED) score: consumption of vegetables, fruits and nuts, cereals, legumes, fish, olive oil, meat, and dairy products. Alcohol not scored. • T1: low rMED (Score 0-7), n=925 • T2: medium rMED (Score 8-9), n=631 • T3: high rMED (Score 10-15), n=639 • *highest score differs btw 15 and 16 throughout the paper at 12wk and 32wk gestation **Dietary assessment methods**: 101-item validated FFQ at 12 and 32wk gestation measured diet in the first trimester	**Significant**: GWG (kg/wk), P=0.017 • T1: 0.35± 0.13 • T2: 0.35± 0.12 • T3: 0.34± 0.13 **Non-significant**:	**Key confounders accounted for:** None **Limitations**: • Start of follow up and exposure did not coincide and potentially important amount of follow-up time was missing from analyses • Important co-exposures were not balanced across groups that were likely to impact the outcome, and no adjustment techniques were used to correct for the issues • No pre-registered data analysis plan **Summary:**

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
▪ III: ~27.1% ▪ IV+V: ~49.7% ○ Education level: ▪ Primary or less: ~22.1% ▪ Secondary: ~41.5% ▪ University: ~36.4% • Physical Activity: METs(hr/d): ~37.4 • Anthropometry: Prepregnancy BMI: ~23.5 • Smoking status: During pregnancy: ~16.6% • GDM: ~4.1% ○ History of GDM: ~0.3% • Parity: ○ Primiparous: ~57.0% ○ Multiparous: ~43.0%	and 12-32wk. Adherence to the Mediterranean diet assessed using the rMED. Values of 0, 1, and 2 assigned to intake tertiles, positively scoring higher intakes for the 6 components that fit into the Mediterranean diet (vegetables, fruits and nuts, cereals, legumes, fish, olive oil). Scoring reversed for meat and dairy. Scores summed for each component, for a total score ranging from 0 to 16. **Outcome & assessment methods**: GWG extracted from prenatal visit records; timing NR		Higher adherence to the Mediterranean diet during pregnancy is associated with lower GWG.
Fulay, 2018[12]; U.S. **PCS, Project Viva** Baseline N=2128 Analytic N=1756 (Attrition: 17%) Participants excluded due to Type 1 or 2 Diabetes Mellitus (n=16), missing outcomes data (n=7) or dietary data (n=345) n=~1760 for all participant characteristics • Age: ○ 15-24y: 7.4% ○ 25-34y: 63.9% ○ 35-44y: 28.8% • Race/Ethnicity:	**Dietary Pattern(s)**: • Adherence to DASH diet ○ Higher adherence characterized by higher intakes of fruits, vegetables, whole grains, nuts/legumes, and low-fat dairy, and lower intakes of sodium, sugar-sweetened beverages, and red and/or processed meats. • Adherence to DASH OMNI diet at 11wk gestation. ○ Higher adherence characterized by higher intakes of fruits, vegetables, whole grains, nuts/legumes, low-fat dairy, and MUFAs and PUFAs, and lower intakes of sodium, sugar-sweetened beverages, and red and/or processed meats. at 11wk gestation	**Significant**: Subsequent GWG (kg) per unit 1st trimester DASH score • Prepregnancy obese (n=244) ○ β=0.31, 95% CI: 0.08, 0.53 Subsequent GWG (kg) per unit 1st trimester DASH OMNI score • Prepregnancy obese (n=244) ○ β=0.34, 95% CI: (0.09, 0.58) **Non-significant**:	**Key confounders accounted for:** Age, Race/ethnicity, SES, Pre-preg BMI, Smoking, Parity **Limitations**: • Accounted for total energy intake • Power analysis NR for this exploratory study based on secondary analysis of existing data • Adjusted for potential mediator (early GWG) • Start of follow up and start of exposure did not coincide • Unclear proportions/reasons for missing exposure data • Self-reported diet and prepregnancy weight • No pre-registered data analysis plan **Summary:**

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ Black: 12.3% ○ Hispanic: 6.5% ○ White: 72% ○ Asian: 5.6% ○ Other: 3.6% • SES: ○ Annual household income ▪ <$20,000: 2.9% ▪ >$70,000: 59.6% ○ Married/cohabiting: 93.3% ○ Education ▪ Primary: 9.4% ▪ Secondary: 58.6% ▪ ≥College: 32.0% • Anthropometry: Prepregnancy BMI: ○ <18.5: 3.9% ○ 18.5-24.9: 60.7% ○ 25.0-29.9: 21.4% ○ ≥30: 12.7% • Smoking status: During pregnancy: 10.9% • GDM: 5.2% • Gestational HTN: History before pregnancy: 4.5% • Parity: ○ 0: 49.3% ○ 1: 35.3% ○ ≥2: 15.4%	**Dietary assessment methods**: Semi-quantitative, validated, 140-item FFQ based on NHS, administered at enrollment (11.1wk gestation).DASH score calculated as weighted sum of frequency of intake/day for the following components, with increasingly postitive scores for higher quintiles of intake for fruits, vegetables, whole grains, nuts/legumes, and low-fat dairy, and for lower quintiles of intake for sodium, sugar-sweetened beverages, and red and/or processed meats. Total score range: 8-40.The DASH diet is rich in fruits, vegetables, legumes, whole grains, and healthy fats, with limited amounts of poultry, red meat, and dairy. The DASH diet also focuses on intake of foods high in macro- and micronutrients that have been specifically demonstrated to be effective in reducing risk of hypertension: reduced amounts of saturated fat, total fat, and cholesterol; and high levels of potassium, magnesium, calcium, fiber, and protein, with ≤3 g/d sodium. DASH OMNI score calculated similarly to DASH score, with the additional component of increasingly postitive scores for higher quintiles of intake of MUFAs and PUFAs. Total score range: 9-45. **Outcome & assessment methods**: GWG from time of FFQ in first trimester to delivery. Derived via linear interpolation between the two measures of weight assessed in closest temporal proximity to the date of FFQ administration and calculated the	Subsequent GWG (kg) per unit 1st trimester DASH score, P=NS • Prepregnancy underweight (n=68) • Prepregnancy normal weight (n=1068) • Prepregnancy overweight (n=376) Subsequent GWG (kg) per unit 1st trimester DASH OMNI score, P=NS • Prepregnancy underweight (n=68) • Prepregnancy normal weight (n=1068) • Prepregnancy overweight (n=376)	Among women with prepregnancy obesity, higher adherence to a DASH or DASH OMNI diet is associated with higher GWG from 1st trimester through delivery. This association was not statistically significant among women with prepregnancy BMI <30.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	difference between the last clinically-measured weight prior to self-reported prepregnancy weight.		
Gesteiro, 2012[2]; Spain **PCS, Mérida Cohort** Baseline N=35 Analytic N=35 n=35 for all participant characteristics • Age: ○ Mean± SE: 30.4± 0.9y ○ <35y: 54% ○ ≥35y: 46% • Race/Ethnicity: All infants were Caucasian • SES: ○ Education degree: ▪ Low: 17% ▪ Medium: 63% ▪ High: 20% • Anthropometry: Prepregnancy BMI: 23.0± 0.6 • Smoking status: 0% • GDM: 0% ○ Positive O'Sullivan glucose tolerance test at 24-28wk gestation: 77% • Parity: ○ Primiparous: 37% ○ Multiparous: 63% • Full-term: 100% • Alcohol consumption: 0%	**Dietary Pattern(s)**: Mediterranean Diet Adherence (MDA) • Low MDA (n=13) • High MDA: olive oil as main culinary fat, higher intakes of vegetables, raw vegetables, fruits, fish or shellfish, nuts (including peanuts), legumes, chicken, turkey or rabbit meat, and dishes seasoned with sofrito, sauce made with tomato, onion, leek or garlic and simmered with olive oil, and lower intakes of red meat, veal, pork, hamburger or sausage, butter, margarine or cream, sweet or carbonated beverages, and commercial sweets or pastries (n=22) at 12-15wk gestation **Dietary assessment methods**: Dietary intake assessed via a validated, 169-item FFQ, conducted by a trained dietician, and included photographs of sample portions to estimate the serving size and volumes consumed. Dietary pattern adherence assessed with the Mediterranean Diet, modified to remove red wine consumption (PERIMED study). 1pt awarded for each of the following 13 components: Use of olive oil as main culinary fat; ≥4 TBSP/d olive oil; ≥2 servings/d vegetables, including ≥1 raw or as salad; ≥3 units of fruits, including juices; <1 serving/d red meat; <1 serving/d butter, margarine or cream; <1 sweet or carbonated beverage/d;	**Significant**: GWG (kg), Mean± SE (95% CI), P= 0.017 • Low MDA: 7.9± 1.8 (4.1, 11.8) • High MDA: 11.5± 0.6 (10.1, 12.8) **Non-significant**:	**Key confounders accounted for:** Race/ethnicity, Smoking, GDM **Limitations**: • Study powered to detect differences in insulin resistance in infants. • No information on group differences in exclusion due to GDM (a potential mediator) • No pre-registered data analysis plan **Summary:** Higher vs lower adherence to a Mediterranean diet at 12-15wk gestation was associated with greater GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	≥3 servings/wk legumes; ≥3 servings/wk fish or shellfish; <3 commercial (not home-made) sweets or pastries; ≥3 servings/wk nuts (including peanuts); Consumption of chicken, turkey or rabbit meat instead of veal, pork, hamburger or sausage; 2 servings/wk vegetables, pasta, rice or dishes seasoned with sofrito, sauce made with tomato, onion, leek or garlic and simmered with olive oil Low Mediterranean Diet adherence (MDA) defined as score <7, and high MDA defined as scores ≥7. **Outcome & assessment methods**: Anthropometrical measurements were taken by trained personnel following hospital's standard procedures. GWG data obtained from hospital records		
Gesteiro, 2012 continued	**Dietary Pattern(s)**: Adherence to Healthy Eating Index • Inadequate HEI (n=19) • Adequate HEI (n=16) • Perfect HEI adherence encourages 6-10 servings/d Cereals, grains, and legumes; 3-5 servings/d Vegetables; 2-4 servings/d Fruits; 2-3 serving/d Milk and dairy products; 2-3 servings/d Meat, eggs and fish; ≤30% FAT; ≤10% SFA; <300mg/d Cholesterol; <2,400 mg/d Sodium; 16 different food items diet variety over 3d at 12-15 wk gestation **Dietary assessment methods**:	**Significant**: **Non-significant**: GWG (kg), Mean, P=NS	**Key confounders accounted for:** Race/ethnicity, Smoking, GDM **Summary:** Adequate vs inadequate adherence to a Healthy Eating Index was not associated with differential GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	Dietary pattern assessed with the Healthy Eating Index (HEI), modified for the Spanish population (Kennedy et al), based on a 10-component, 100-point scale, taking into account recommended energy intakes of for 1600, 2200 and 2800 kcal and the required servings. Diets with HEI scores of ≤70 were labelled 'inadequate', vs 'adequate' (scores >70). Dietary components included 10 groups (by 1600, 2200 and 2800 kcal/d recommendations): Cereals, grains, and legumes (0=0 servings, 10=6, 8, 10 servings); Vegetables (0=0 servings, 10=3, 4, 5 servings); Fruits (0=0 servings, 10=2, 3, 4 servings); Milk and dairy products (0=0 servings, 10=2-3 servings) ; Meat, eggs and fish (0=0 servings, 10=2-3 servings); % FAT (0=≥45%, 10=≤30%); % SFA (0=≥15%, 10=≤10%); Cholesterol (0=≥450mg/d, 10=<300mg/d); Sodium (0=≥ 4,800 mg/d, 10=<2,400 mg/d); Diet variety over 3d (0=≤6 different food items, 10=16 different food items)		
Hillesund, 2018[21]; Norway **PCS, NFFD** Baseline N=606 Analytic N=524 Twelve women withdrew due to miscarriage (n=6), twin pregnancy (n=2), and moving away (n=4), very low BMI (n=1), and personal reasons (n=2), leaving 591 eligible for the present analyses.	**Dietary Pattern(s)**: • Adherence to the Norwegian Fit for Delivery (NFFD) diet, • Low (Score 0-3), n=151 • Medium (Score 4-5), n=204 • High (Score 6-10), n=236 • Higher scores characterized by eating/drinking: ≥24 main meals/wk, water for ≥44% of drinking events, vegetables with dinner ≥5x/wk, fruits or vegetables as snacks ≥3x/wk, <1x/d sugar-rich food items, <1x/d fast-foods, snacks, or other	**Significant**: GWG Adequacy, per 1pt NFFD score • Excessive (Ref: Optimal GWG), n=528, P=0.024 ○ aOR=0.90, 95% CI: (0.83, 0.99) <u>Subanalysis additionally adjusting for PA</u>	**Key confounders accounted for:** Age, SES, PA (subanalyses), Pre-preg BMI, Smoking, Parity **Limitations**: • Models adjusted for randomization assignment, but residual confounding could remain • The study was restricted to nulliparous women, so the findings may not be generalizable

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
n=~591 for participant characteristics • Age: 28.0± 4.4 y (range 18–44y) ○ <25y: 25.2%, ○ 25-29y: 46.2% ○ 30-34y: 21.8% ○ ≥35y: 6.8% • Race/Ethnicity: "predominantly White, European" • SES: Education: ○ ≤12y: 31.8% ○ 13-15y: 32.7% ○ ≥16y: 35.5% • Occupation: ○ Work outside home: 84.2% ○ Student: 8.7% ○ Unempoyed: 3.9% ○ Sick leave/disabled: 1.9% ○ Homemaker: 1.4% • Income (NOK): ○ ≤400,000: 31.2% ○ >700,000: 34.4% ○ Refrain from response: 6.6% • Marital Status: ○ Married/boyfriend/partner: 96.2% • PA: The intervention also included supervised exercise classes (2/wk), including strength training and cardiovascular exercise at moderate intensity • PA level in early pregnancy: ○ Low activity: 26.4% ○ Medium activity: 58.2% ○ High activity: 15.4% • Anthropometry: Pre-preg BMI: 23.7± 3.9 ○ <19: 0%	salty food, never eating sweets and snacks without appreciation, buying small portion size of ≥1 unhealthy food items, eating beyond satiety <1/wk, and reading nutrition labels on foods sometimes or often. at 15 wk gestation **Dietary assessment methods**: 43-item FFQ, including questions about selected aspects of current diet and dietary behavior, mainly those targeted in NFFD. The subscales could be single variables or sum scores constructed from relevant questionnaire responses. Each subscale was dichotomized with the sample median as cutoff, and participants with the healthier behavior were assigned ‘1’ in each subscale, whereas the other half of the sample was assigned ‘0’. Individual diet scoring ranged from 0 to 10, with higher score indicating healthier behavior. **Outcome & assessment methods**: GWG calculated as final measured weight within 2wk of delivery among women at term (≥37wk gestation) minus self-reported prepregnancy weight. GWG adequacy defined by 2009 IOM recommendations.	GWG Adequacy, per 1pt NFFD score • Excessive (Ref: Optimal GWG, Low adherence), n=418, P=0.009 • aOR=0.88, 95% CI: (0.79, 0.97) **Non-significant**: GWG Adequacy, per 1pt NFFD score • Inadequate (Ref: Optimal GWG, Low adherence), n=524, P=NS <u>Sub-analysis additionally adjusting for PA</u> GWG Adequacy, per 1pt NFFD score Inadequate (Ref: Optimal GWG, Low adherence), (n=414) , P=NS	• Diet score showed test–retest reproducibility but this was not validated against other methods of operationalizing dietary behavior • Not all participants who would have been eligible for the target trial were included in the study • Single FFQ did not address full diet • Smoking status varied by diet score, but included in models • May not have accounted for all effects of co-exposures across groups • Total missingness similar across groups, but unclear proportions for different reasons for missingness • The outcome measure may be influenced by knowledge of the exposure received by study participants • No pre-registered data analysis plan **Summary:** Higher adherence to NFFD diet at 15wk gestation is associated with lower odds of excessive GWG at term, regardless of dietary and exercise intervention.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ <25: 72.2 % ○ 25-29.9: 20.2 % ○ ≥30: 7.6% • Smoking status: Current: 3.9% • GDM: ~9.1% • Gestational HTN: PE: ~4.3% • Parity: Nulliparous: 100%			
Hillesund, 2014[5]; Norway **PCS, MoBa** Baseline N=66,597 Analytic N=56629 (Attrition: 15%) • Age: 30.1± 4.6y • Race/Ethnicity: NR • SES: ○ Education ▪ ≤12y: ~33.3% ▪ 13-16y: ~33.3% ▪ ≥17y: ~33.3% • Anthropometry: Prepregnancy BMI: 24.0± 4.2 • Smoking: During pregnancy: ~7.2% • Physical Activity: Exercise: ○ Rarely: ~37.4% ○ 1-2 times/wk: ~32.1% ○ ≥3 times/wk: ~30.5% • GDM: History of DM: 0% • Parity: ○ 0: ~52.7% ○ 1: ~30.2% ○ 2: ~13.4% ○ ≥3: ~3.7%	**Dietary Pattern(s)**: Adherence to New Nordic Diet (NND) • Low, n=17802 • Medium, n=23558 • High, n=25237 • Higher scores characterized by eating/drinking: ≥24 main meals/wk, Nordic fruits ≥5/wk, root vegetables ≥5/wk, cabbage ≥2/wk, potatoes at least one-third of total occasions of eating potatoes, rice or pasta, whole grain bread more often than refined bread, oatmeal ≥1/mo, fish/game/berries ~2/wk, milk more often than juice, ≥6 times as much water as sugar-sweetened beverages at 22wk gestation **Dietary assessment methods**: Self-administered, semi-quantitative FFQ validated for use in MoBa (see Brantsaeter, 2008) **Outcome & assessment methods**: GWG, difference between prepregnancy body weight and body weight at birth, as	**Significant**: GWG (kg) • Overall: 15.0± 5.9 • Inadequate: 6.8± 3.9 • Optimal: 12.8± 2.5 • Excessive: 19.3± 4.7 GWG adequacy (%) • All Women, P<0.001 ○ Low: ▪ Inadequate: 18.7 ▪ Optimal: 33.0 ▪ Excessive: 48.3 ○ Medium: ▪ Inadequate: 18.4 ▪ Optimal: 34.6 ▪ Excessive: 47.1 ○ High: ▪ Inadequate: 18.6 ▪ Optimal: 35.9 ▪ Excessive: 45.4 • Prepregnancy BMI <25, P=0.008 ○ Low: ▪ Inadequate: 21.8 ▪ Optimal: 39.1	**Key confounders accounted for:** None **Limitations**: • Limited generalizability due to homogenous sample • Potential selection bias because of excluding preterm and post-term infants • Start of follow up and start of exposure did not coincide • Self-reported outcome • Unclear why the sample size in table 4 was smaller than other tables • Energy intake was potentially on the causal pathway, but was still adjusted for in the multivariable regression model **Summary:** Greater adherence to the NND during pregnancy may facilitate optimal GWG, especially among with healthy prepregnancy BMI

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	reported in questionnaires at 17wk gestation and 6 mo postpartum. GWG categorized into inadequate, optimal and excessive (2009 IOM recommendations)	▪ Excessive: 39.1 ○ Medium: ▪ Inadequate: 21.7 ▪ Optimal: 40.2 ▪ Excessive: 38.1 ○ High: ▪ Inadequate: 21.8 ▪ Optimal: 41.6 ▪ Excessive: 36.6 **Non-significant**: GWG adequacy (%) • Prepregnancy BMI ≥25, P=0.07 ○ Low: ▪ Inadequate: 12.7 ▪ Optimal: 21.4 ▪ Excessive: 65.9 ○ Medium: ▪ Inadequate: 10.8 ▪ Optimal: 21.9 ▪ Excessive: 67.2 ○ High: ▪ Inadequate: 10.2 ▪ Optimal: 20.8 ▪ Excessive: 69.0	
Hillesund, 2014 continued		**Significant**: Inadequate GWG (Ref: Optimal GWG, Low NND), aOR (95% CI) • Prepregnancy BMI ≥25 ○ Medium: 0.86 (0.74, 0.99), P=0.038	**Key confounders accounted for:** Age, SES, Pre-preg BMI, Smoking, PA, GDM, Parity **Summary:** Greater adherence to the NND during pregnancy may facilitate optimal GWG,

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

		Excessive GWG (Ref: Optimal GWG, Low NND), aOR (95% CI)
		• Prepregnancy BMI <25
		  ○ High: 0.93 (0.87, 0.99), P=0.024
		
		Non-significant:
		Inadequate GWG (Ref: Optimal GWG, Low NND), aOR (95% CI)
		• Prepregnancy BMI <25
		  ○ Medium, P=NS
		  ○ High, P=NS
		• Prepregnancy BMI ≥25
		  ○ High, P=NS
		
		Excessive GWG (Ref: Optimal GWG, Low NND), aOR (95% CI)
		• Prepregnancy BMI <25
		  ○ Medium, P=NS
		• Prepregnancy BMI ≥25
		Medium, P=NS
			especially among with healthy prepregnancy BMI

Hrolfsdottir, 2019[14]; Iceland **PCS, PREWICE** Baseline N=1326 Analytic N=1326 n=1326 for all participant characteristics	**Dietary Pattern(s)**: • Low risk diet score (≤2 pt), n=305 • Medium risk diet score (3 pt), n=632 • High risk diet score (≥4 pt), n=389 • Higher risk score (out of 5) characterized by: Not eating a varied diet, <5/d fruits/vegetable , <2/d dairy, <2/d whole	**Significant**: Excessive GWG • Per unit increase in score: aRR: 1.10 (1.01, 1.19) • Per SD increase in score: aRR: 1.08, 95% CI: (1.01, 1.15), P<0.05	**Key confounders accounted for:** Age, SES, Pre-preg BMI, Smoking, GDM (in subanalyses), Parity **Limitations**: • Power analysis NR • Self-reported diet, prepregnancy weight and height

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

• Age: 30.2± 5.2y
• Race/Ethnicity: NR
• SES:
  ○ Married status: Single: 6%
  ○ Education:
    ▪ Elementary: 13%
    ▪ High & technical school: 29%
    ▪ University: 35%
    ▪ Higher academic: 24%
• Anthropometry: Pre-preg BMI: 24.1± 6.5
  ○ <18.5: 4%
  ○ 18.5–24.9: 55%
  ○ ≥25.0–30.0: 24%
  ○ ≥30.0: 18%
• Smoking status:
  ○ Before preg: 16%
  ○ During preg: 7%
• GDM: 19.9%
• Parity: Nulliparous: 39%
	grain products, ≥5/wk sugar/artificially sweetened beverages, and ≥5/d dairy.
	at 11-14wk gestation
	
	Dietary assessment methods:
	Risk factors for inadequate diet assessed from 40-item FFQ. Women reported diet in the previous 4wk, corresponding to the first trimester (enrolled in 11–14 week of pregnancy). This information was converted to frequency/wk for all food groups, which was then transformed into 13 predefined dietary risk factors for inadequate diet, based on the Icelandic Food-Based Dietary Recommendations, which are based on the Nordic Nutrition Recommendations (2014). If the women excluded/avoided any of the main food groups (cereal, vegetables/ fruits, fish, meat, eggs, high-fat foods, or dairy), they were categorized to the group not eating a varied diet.
	After logistic regression modeling to predict excessive GWG, the six dietary risk factors (predictors) were included in the final model. To construct a total dietary risk score, each participant got 1 for fulfilling the risk criteria and 0 for not fulfilling the risk criteria. The scores of the six dietary risk factors were then summed up, ranging from scores of 0 to 5 as it was not possible to be in both milk risk groups (too low/too high).
	
	Outcome & assessment methods:
	Excessive GWG: >18 kg in women with normal pre-pregnant weight and >12 kg in
		• Low risk diet score: Cases=99 (32%)
		• High risk diet score: Cases n=160 (41%)
		  ○ aRR vs Low risk scores: 1.23, 95% CI: (1.002, 1.50), P<0.05
		
		Non-significant:
		Excessive GWG
		• Low risk diet score: Cases n=99 (32%)
		• Medium risk diet score: Cases n=217 (34%)
		  ○ aRR vs Low scores: 1.04, 95% CI: (0.86, 1.26), P=NS
		
		<u>Analyses excluding 264 GDM cases:</u>
		Excessive GWG
		• Per one unit increase in score: aRR: 1.09, 95% CI: (1.00, 1.19), P=NS
		
		• Low risk diet score: Cases n=89/266 (34%)
		• Medium risk diet score: Cases n=184/533 (35%)
		  ○ aRR vs Low scores: 1.01, 95% CI: (0.82, 1.23), P=NS
			• Potential differential exposure time between groups
			• Unclear whether analyses accounted for group differences in missing data
			• Unclear systematic errors in outcome measurement by exposure
			• No pre-registered data analyses
			
			Summary:
			A higher dietary risk score, including a nonvaried diet, a nonadequate intake of fruits/vegetables, dairy, and whole grain, as well as an excessive intake of sugar/artificially sweetened beverages and dairy, was associated with a higher risk of excessive GWG, but the association disappeared after removing GDM cases.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	women with pre-pregnant overweight and obesity GWG retrieved from the maternal hospital records as women were weighed in antenatal visits. Total GWG calculated as the difference between the highest recorded weight (≥36wk) and prepregnancy weight.	• High risk diet score: Cases n=136/326 (42%) ○ aRR vs Low scores: 1.19 , 95% CI: (0.96, 1.47), P=NS	
Hrolfsdottir, 2019 continued	**Dietary Pattern(s)**: • Score based on three dietary risk factors most strongly associated with excessive GWG in the multivariable model. Higher dietary risk scores characterized by ≥ 5/wk sugar- and artificially sweetened beverages, <2/d whole grain products, and ≥5/d dairy at 11-14wk gestation	**Significant**: Excessive GWG Per SD increase in score aRR: 1.08, 95% CI: (1.002, 1.15), P<0.05 **Non-significant**:	**Key confounders accounted for:** Pre-preg BMI, Smoking, GDM (in subanalyses), Parity **Summary:** A higher dietary risk score, including excessive intake of sugar- and artificially sweetened beverages, inadequate intake of whole grains, and nonadequate intake of dairy was associated with a higher risk of excessive GWG.
Hrolfsdottir, 2019 continued	**Dietary Pattern(s)**: • Diet score based on 13 dietary risk factors. Higher dietary risk scores characterized by: not eating a varied diet, <5/d vegetables and fruits, <2/d fish, <2/d dairy, <2/d whole grain products, <3.5/wk beans, nuts, seeds, <5/wk D-vitamin, using butter rather than oil (≥50%), ≥ 1/wk french fries and fried potatoes, ≥ 2.5/wk sweets, ice cream, cakes, cookies, ≥ 5/wk sugar- and artificially sweetened beverages, ≥ 5/d dairy intake, ≥1/wk processed meat products at 11-14wk gestation	**Significant**: **Non-significant**: Excessive GWG: Per SD increase in score, P=NS	**Key confounders accounted for:** Pre-preg BMI, Smoking, GDM (in subanalyses), Parity **Summary:** A higher dietary risk score including 13 dietary risk factors (as described in the exposure) was not associated with the risk of excessive GWG.
Meinila, 2017[27]; Finland **PCS, Control arm of RADIEL trial**	**Dietary Pattern(s)**: Healthy Food Intake Index (HFII) adherence	**Significant**:	**Key confounders accounted for:** None

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
Baseline N=137 Analytic N=137 • Age: ~32y • Race/Ethnicity: NR • SES: Education: ~14.3y • PA: Leisure-time physical activity: ~78.3 min/wk • Anthropometry: BMI at 12.0-14.6wk: ~31.7 • 100% ≥30 BMI <u>or</u> with history of GDM • GDM: ~40.1% • Parity: Nulliparous: ~37.2%	• HFII score 0-7 (n=24) • HFII score 8-12 (n=84) • HFII score 13-17 (n=29) • Higher scores are indicative of higher adherence to the Nordic Nutrition Recommendations (NNR), characterized by higher consumption of fruits, vegetables, whole-grains, and fish and poultry, and lower intakes of red and processed meat, and refined grains. at first trimester (~13wk) **Dietary assessment methods**: Diet assessed during the first trimester via FFQ. The HFII comprised the following components: snacks, low-fat cheese, fish, low-fat milk, vegetables, fruits and berries, sugar-sweetened beverages, high-fiber grains, fast food, fat spread, and cooking fat. The HFII scores were divided into three categories by setting z cut-off limits at ± 1 SD from the mean. **Outcome & assessment methods**: Weight measured by a study nurse. GWG from 12.0-14.6wk through 22.4-24.1wk gestation.	**Non-significant**: GWG from first to second trimester (kg), P=NS	**Limitations**: • The study enrolled only those women who were at risk of GDM (i.e. women with a history of GDM and/or prepregnancy BMI ≥30). The findings, therefore, may not be generalizable • Potential selection bias due to exclusion after first trimester OGTT • Women diagnosed with GDM may have altered their diet in an unbalanced way • Potential differential exposure time between groups • Reasons for/characteristics of women with missing outcome data NR • Total GWG not measured • No pre-registered data analysis plan. **Summary:** Adherence to the Healthy Food Intake Index during the first trimester was not associated with GWG from first to second trimester.
Poon, 2013[7]; U.S. **PCS, IFPSII** Baseline N=893 Analytic N=893 (Attrition: 0%)	**Dietary Pattern(s)**: Alternative Healthy Eating Index for Pregnancy (AHEI-P): • T1: (n=285) • T2: (n=286) • T3: (n=282)	**Significant**: **Non-significant**: GWG (kg), P=NS T1: 13.4± 6.4	**Key confounders accounted for:** None **Limitations**:

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
• Age: 29.1± 5.4y • Race/Ethnicity: White: 87.4% • SES: ○ Education: ▪ High school or less: 18.0% ▪ Some college: 39.3% ▪ Associate or BA: 31.7% ▪ Master or more: 10.9% ○ Poverty index ratio: ▪ <185%: 37.5% ▪ ≥350%: 23.7% • Anthropometry: Prepregnancy BMI: 26.1± 6.4 • Smoking Status: Yes: 8.3%	Based on a 130-point scale with 0–10 points awarded for optimal intake of 13 types of foods and nutrients • Positively-scored components: vegetables, whole fruit, whole grains, nuts and legumes, long-chain (n-3) fats, PUFAs, folate, calcium, and iron • Negatively-scored components: sugar-sweetened beverages, red and processed meat, trans fat, and sodium at 28-36wk gestation **Dietary assessment methods**: Modified version of the Diet History Questionnaire (DHQ) previously developed and validated by the National Cancer Institute (see Subar, 2001a; Subar, 2001b; Thompson, 2002a; Thompson, 2002b) **Outcome & assessment methods**: GWG at postpartum using neonatal questionnaire	T2: 14± 6.1 T3: 14.4± 5.8	• Baseline differences in BMI between groups and it is possible that the rate of weight gain might have differed based on their baseline BMI, but not discussed or accounted for • GWG is self-reported **Summary:** There was no association between adherence to the AHEI-P and GWG
Rifas-Shiman, 2009[6]; U.S. **PCS, Project Viva** Baseline N=1777 Analytic N=1666 2,670 enrolled, then excluded 329 due to subsequent ineligibility. Additional women withdrew (n=195), or were lost to follow-up (n=18). 1777 completed first FFQ, 1666 completed second FFQ	**Dietary Pattern(s)**: Adherence to Alternate Healthy Eating Index for Pregnancy (AHEI-P) • Based on 9 components: vegetables; fruit; ratio of white to red meat; fiber; *trans* fat; ratio of polyunsaturated to saturated fatty acids; and folate, calcium, and iron from foods (each 10 points, with a total of 90 points)	**Significant**: **Non-significant**: 50% experienced excessive weight gain GWG Adequacy for each 5 point increase in AHEI-P score (Ref: Adequate) • First trimester (n=1,777)	**Key confounders accounted for:** Age, Race/Ethnicity, SES, Pre-preg BMI **Limitations**: • Unclear whether those who did not complete FFQ in round 2 were different from those that completed first FFQ. • Follow-up time varied across participants • Reasons for exposure missingness NR • Pre-registered data analysis plan NR

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

• Age: 32.4± 4.9y
• Race/Ethnicity:
  ○ White: 72%
  ○ Black/African American: 12%
  ○ Other, > 1 race: 16%
• SES:
  ○ Education:
    ▪ ≤High school diploma: 9%
    ▪ Some college/tech school: 21%
    ▪ College graduate: 69%
  ○ Household income <$40,000/y: 13%
• Anthropometry: Prepregnancy BMI: 24.6± 5.3
• Parity
  ○ Nulliparous: 49%
  ○ 1: 36%
  ○ ≥2: 15%
	• Changes made to original AHEI: Alcohol, nuts excluded; folate, calcium and iron included
	at first trimester (~11wk) and second trimester (~26-28wk)
	Dietary assessment methods:
	166-item validated semiquantitative FFQ, slightly modified for use in pregnancy (Based on extensively validated Willett FFQ used in the Nurses' Health Study and calibrated against blood levels) (see Fawzi, 2004)
	Outcome & assessment methods:
	Self-reported prepregnancy weight at baseline.
	Last clinical prenatal weight recorded - self-reported prepregnancy weight
	GWG adequacy based on IOM 1990 recommendations
		○ Inadequate, P=NS
		○ Excessive, P=NS
		• Second trimester (n=1,666)
		  ○ Inadequate, P=NS
		Excessive, P=NS
			Summary:
			AHEI-P is not associated with pregnancy weight gain

Sen, 2016[9]; U.S.
PCS, Project Viva
Baseline N=1808 Analytic N=1808
n=~1808 for most participant characteristics
• Age: 32.2± 5.0y
• Race/Ethnicity:
  ○ Black: 13.9%
  ○ Hispanic: 6.8%
	Dietary Pattern(s):
	Dietary inflammatory index (DII) score:
	• Lower scores indicate lower dietary inflammation, characterized by higher intakes of vegetables, fruit, whole-grain foods, fish/seafood, and whole eggs, and lower intakes of red or processed meats and sugar-sweetened soda.
	mean score from ~9.9wk and ~27.9wk gestation
		Significant:
		Non-significant:
		GWG adequacy per unit of DII (Ref: Adequate):
		• All women (n=1808)
		  ○ Inadequate, P=NS
		  ○ Excessive, P=NS
		• Prepregnancy BMI 18.5-<25 (n=1141)
		  ○ Inadequate, P=NS
		  ○ Excessive, P=NS
			Key confounders accounted for:
			Age, Race/ethnicity, SES, Pre-preg BMI, Smoking, Parity
			Limitations:
			• Data collected at the end of 2^{nd} trimester may be influenced by GDM knowledge
			• Start of follow up and start of exposure may not coincide
			• Self-reported diet and prepregnancy weight

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ Asian: 5.0% ○ White: 70.6% ○ Other: 3.8% • SES: ○ Graduated college: 68.6% ○ Household income ≤$70,000: 36.5% • Anthropometry: Prepregnancy BMI: 24.9± 5.2 ○ 18.5-<25: 63.1% ○ 25-<30: 22.5% ○ ≥30: 14.4% • Smoking status: ○ Never: 67.8% ○ Former: 21.0% ○ During pregnancy: 11.2% • GDM: 5.4% • Gestational HTN: 6.9% ○ Chronic HTN: 1.4% ○ PE: 3.5% • Parity: Nulliparous: 48.6%	**Dietary assessment methods**: Mothers completed self-administered FFQs at median 9.9wk and 27.9wk gestation., assessing diet intake during the first and second trimesters. Dietary data used to estimate a standard global mean for the 28 food parameters included in the DII, then converted to a centered percentile score, multiplied by the literature-derived respective food parameter effect score to obtain a food parameter–specific DII score, which were all summed to create the overall DII score for each participant. A higher DII score indicates a more proinflammatory diet, whereas a more negative score represents a more anti-inflammatory diet. **Outcome & assessment methods**: GWG (kg) calculated as the difference between the last recorded clinical weight before delivery and self-reported prepregnancy weight reported at the first study visit (9,9wk gestation). GWG adequacy categorized by IOM (2009) recommendations.	• Prepregnancy BMI 25-<30 (n=406) ○ Inadequate, P=NS ○ Excessive, P=NS • Prepregnancy BMI ≥30 (n=261) ○ Inadequate, P=NS ○ Excessive, P=NS	• Important co-exposures were not balanced across groups, and adjustment techniques were used to correct for the issues. • No information on reasons for missingness or proportions across groups • Any error in measuring the outcome is only minimally related to exposure status • No pre-registered data analysis plan **Summary:** Consumption of a low DII diet during the first and second trimesters was not associated with GWG.
Tielemans, 2015[8]; Netherlands **PCS, Generation R Study** Baseline N=4097 Analytic N=2748 (Attrition: 33%) • Age: ~31.3y	**Dietary Pattern(s)**: • Adherence to standardized Dutch Healthy Diet Index. Higher scores indicate better adherence and higher intake of vegetables, fruits, fiber, and fish, and lower intake of saturated fat and sodium. at ~13.4wk	**Significant**: **Non-significant**: Sensitivity Analysis (excludes women with GDM or hypertensive disorders of pregnancy)	**Key confounders accounted for:** Age, Race/ethnicity, SES, Pre-preg BMI, Smoking, GDM, HTN, Parity **Limitations**: • Self-reported diet, prepregnancy weight, and maximum pregnancy weight

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
• Race/Ethnicity: 100% of Dutch ancestry • SES: ○ Education: ▪ Low and midlow: ~18.2 ▪ Midhigh: ~51.5 ▪ High: ~30.4 ○ Household income <2200 Euro/mo: ~28.3 • Anthropometry: Prepregnancy BMI: ~24.7 • Smoking status: ○ Never in pregnancy: ~74.4 ○ Until pregnancy known: ~8.3 ○ During pregnancy: ~17.4 • Alcohol: ○ Never in pregnancy: ~36.6 ○ Until pregnancy known: ~16.5 ○ During pregnancy: ~46.9	**Dietary assessment methods**: The Dutch HDI was modified to align with pregnancy recommendations and available data, and consisted of 6 components: vegetable, fruit, dietary fiber, fish, saturated fatty acids, and sodium. The score of each component ranged between 0 and 10 points, resulting in a total score ranging from 0 to 60 points. **Outcome & assessment methods**: Self-reported prepregnancy weight collected at enrollment. Staff measured weight at 3 study visits: ~12.9wk (first visit), ~20.4wk (second visit), and ~30.2wk (third visit). At 6wk postpartum, women self-reported maximum weight during pregnancy. GWG in different phases of pregnancy was calculated mid-pregnancy GWG (weight at the second visit minus weight the first visit, divided by follow-up duration (g/week), n = 2748), late-pregnancy GWG (weight at the third visit minus weight at the second visit, divided by follow-up duration (g/week), n = 3158), and GWG until early-third trimester (weight at the third visit minus prepregnancy weight, divided by follow up duration (g/week), n = 2815). Women's total GWG (maximum pregnancy weight minus prepregnancy weight, n = 1917) was used to classify their GWG into inadequate, adequate, or excessive GWG according to IOM (2009) recommendations.	GWG until early-third trimester (g/wk) • Prepregnancy Normal Weight Women (n=1937) ○ Dutch HDI Pattern, P=0.06 per SD increase in DP score ▪ Q1: Ref ▪ Q2: β=-13, 95% CI: (−29, 3) ▪ Q3: β=-4, 95% CI: (−20, 12) ▪ Q4: β=-16, 95% CI: (−33, 1) • Prepregnancy Overweight Women (n=532) Dutch HDI Pattern, P=NS per SD increase in DP score	**Summary:** Adherence to Dutch HDI the was not associated with GWG.
Tielemans, 2015 continued		**Significant**:	**Key confounders accounted for:**

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

		Non-significant:
		Mid-Pregnancy Weight Gain (g/wk)
		• Prepregnancy Normal Weight Women (n=2079)
		  ○ Dutch HDI Pattern, P=0.76 per SD
		
		• Prepregnancy Overweight Women (n=669)
		  ○ Dutch HDI Pattern, P=0.88 per SD
		
		Late-Pregnancy Weight Gain (g/wk)
		• Prepregnancy Normal Weight Women (n=2384)
		  ○ Dutch HDI Pattern, P=0.57 per SD
		
		• Prepregnancy Overweight Women (n=774)
		  ○ Dutch HDI Pattern, P=0.58 per SD
		
		GWG adequacy:
		• Inadequate GWG (n=459, Ref: Adequate intake, n=632)
		Excessive GWG (n=826, Ref: Adequate intake, n=632)
			Age, Race/ethnicity, SES, Pre-preg BMI, Smoking, Parity
			
			Summary:
			Adherence to Dutch HDI the was not associated with GWG.

Yong, 2019[20]; Malaysia **PCS, SECOST**	**Dietary Pattern(s)**: • Modified HEI for Malaysians comprised of 9 components, each with max score of 10	**Significant**: GWG adequacy by HEI in each trimester	**Key confounders accounted for:** Age, SES, PA, Pre-preg BMI, Parity

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

Baseline N=480 Analytic N=480 (Attrition: 0%)
 	
• Age: 30.16± 4.51y
• Race/Ethnicity:
  ○ Malay: 89.0%
  ○ Non-Malay: 11.0%
• SES:
  ○ Education level: 12.95± 2.41y
    ▪ Secondary and lower: 46.0%
    ▪ STPM/matric/diploma/certificate: 32.7%
    ▪ Tertiary and above: 21.3%
  ○ Occupation status: Employed: 69.2%
  ○ Monthly household income: RM 3698.30± 2034.20
    ▪ Low: 63.5%
    ▪ Middle: 33.5%
    ▪ High: 2.9%
  ○ Household size: 3.78± 1.63
    ▪ ≤2: 24.2%
    ▪ 3–4: 50.0%
    ▪ ≥5: 25.8%
• Physical Activity: MET hrs/week:
  ○ 2nd trimester 264.58± 118.06
  ○ 3rd trimester: 249.56± 107.36
• Anthropometry:
  ○ Pre-preg weight (kg): 59.11± 13.57
  ○ Pre-preg BMI: 24.10± 5.06
  ○ Underweight: 10.2%
  ○ Normal: 53.1%
  ○ Overweight: 22.3%
  ○ Obese: 14.4%
• GDM: History: 7.5%
• Parity: 1.22± 1.29
	and min score of 0. Higher score indicates intake closer to recommended range.
	  ○ Adherence with the 7 major food groups recommended by Malaysian Dietary Guidelines 2010 (MDG):
	    ▪ Cereals and grains
	    ▪ Vegetables
	    ▪ Fruits
	    ▪ Milk and milk products
	    ▪ Poultry, meat and egg,
	    ▪ Fish and seafood
	    ▪ Legumes
	  ○ Adherence with MDG recommendations for %E from fat and sodium intake.
	once during each trimester
	
	Dietary assessment methods:
	24-hr recall conducted each trimester. Dietary data analyzed using Nutritionist Pro Diet Analysis software: Version 1.5.
	Score for each HEI component calculated using formula: (Actual serving consumed based on respondent's diet recall/recommended serving size based on MDG) and multiplied by 10. If an individual consumed less than the recommended amount of servings, score was calculated with the formula: 10 × (the consumed amount of servings)/ (the lower limit of the recommended serving). If an individual consumed more than the recommended amount of servings, the score was calculated with the formula: 10–10 × [(the consumed servings) − (the upper limit of the recommended servings)]/(the upper limit of the recommended serving). Each score
		• All women
		  ○ 2nd trimester:
		    ▪ Inadequate: OR=0.98, 95% CI=(0.96, 0.98), P=0.03
		  ○ 3rd trimester:
		    ▪ Excessive: OR=1.04, 95% CI=(1.01, 1.06), P=0.01
		
		• Non-oveweight/obese (n=304):
		  ○ 2nd trimester:
		    ▪ Inadequate: OR=0.97, 95% CI=(0.95, 0.99), P=0.01
		  ○ 3rd trimester:
		    ▪ Excessive: OR=1.04, 95% CI=(1.01, 1.07) P=0.03
		
		• Overweight/obese (n=176):
		  ○ 2nd trimester:
		    ▪ Excessive: OR=1.04, 95% CI=(1.01, 1.07), P=0.02
		  ○ 3rd trimester:
		    ▪ Excessive: OR=1.04, 95% CI=(1.01–1.08), P=0.02
		
		Non-significant:
		GWG adequacy by HEI in each trimester
		• All women
		  ○ 1st trimester:
			Limitations:
			• Respondents were not representative of the general population of pregnant women in Malaysia.
			• Self-reported dietary data; single 24-h dietary recall might not represent the usual intake
			• Third trimester results may be cross-sectional—unclear timing of third FFQ
			• Start of follow up and start of exposure did not coincide and a potentially important amount of follow-up time is missing from analyses
			• Co-exposures and reasons for missingness between groups NR
			• High risk of selective reporting from among multiple analyses
			• Information on missingness NR
			• No pre-registered data analysis plan
			
			Summary:
			Women who were not overweight or obese prepregnancy with a higher total HEI score in the second trimester were at a lower risk for inadequate GWG, while women who were overweight or obese prepregnancy with a higher total HEI score in the second trimester were at a higher risk for excessive GWG. Women with a higher total HEI score in the third trimester were at higher risk for excessive GWG, regardless of prepregnancy BMI.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
○ 0: 36.7% ○ 1–2: 47.7% ○ ≥3: 15.6%	rounded off to nearest whole number. When calculation produced a negative score because of excess servings, score converted to 0. **Outcome & assessment methods**: Prepregnancy weight self-reported. Weight measured at 10–13wks, 24–32wks, and 34–38wks using standard instrument and procedures. GWG calculated as difference between measured weight at last visit and prepregnancy weight.	▪ Inadequate, P=NS ▪ Excessive, P=NS ○ 2nd trimester: ▪ Excessive, P=NS ○ 3rd trimester: ▪ Inadequate, P=NS • Non-oveweight/obese (n=304): ○ 1st trimester: ▪ Inadequate, P=NS ▪ Excessive , P=NS ○ 2nd trimester: ▪ Excessive, P=NS ○ 3rd trimester: ▪ Inadequate, P=NS • Overweight/obese (n=176): ○ 1st trimester: ▪ Inadequate, P=NS ▪ Excessive, P=NS ○ 2nd trimester: ▪ Inadequate, P=NS ○ 3rd trimester: Inadequate, P=NS	
Zhu, 2019[16]; U.S. **PCS, PETALS** Baseline N=2269 Analytic N=2269 Of 2525 enrolled, loss to follow-up due to pregnancy loss (n=37), moved (n=7) or excluded due to missing data on child BW (n=94), FFQ (n=87), >6000 kcal/d reported (n=23), or due to FFQ after GDM diagnosis (n=8)	**Dietary Pattern(s)**: • Healthy Eating Index (HEI) index measures adherence to the USDA Dietary Guidelines for Americans. The HEI-2010 consists of 12 components (total fruit, whole fruit, total vegetables, greens and beans, whole grains, dairy, total protein foods, seafood and plant proteins, fatty acids, refined grains, sodium and empty calories from solid fats, alcohol and added sugars), with a maximum possible score of 100. Alcohol	**Significant**: **Non-significant**: GWG (kg), P=0.69 • Q1: 13.2± 6.7 • Q2: 13.2± 6.2 • Q3: 12.9± 6.2 • Q4: 13.1± 6.0	**Key confounders accounted for:** None **Limitations**: • Participant characteristics not balanced across groups • Selection into the study related to exposure and outcome and could not be adjusted for in the analyses

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings

n=2269 for all participants characteristics
• Age:
  ○ 18-24: ~16.1%
  ○ 25-29: ~26.5%
  ○ 30-34: ~35.8%
  ○ ≥35: ~21.6%
• Race/Ethnicity:
  ○ Non-Hispanic White: ~22.3%
  ○ Hispanic: ~41.3%
  ○ African American: ~9.4%
  ○ Asian/Pacific Islander: ~23.6%
  ○ Other: ~3.5%
• SES:
  ○ Education:
    ▪ High School or less: ~13.8%
    ▪ Some college: ~38.4%
    ▪ College graduate or above: ~47.9%
  ○ Household income ($):
    ▪ <50,000: ~32.7%
    ▪ ≥150,000: ~15.9%
• Physical Activity: ~152.1 METs/wk
• Anthropometry: Pre-preg BMI:
  ○ <18.5: ~2.7%
  ○ 18.5-24.9: ~40.3%
  ○ 25.0-29.9: ~28.9%
  ○ ≥30.0: ~28.1%
• Smoking status: 0.5%
• GDM: ~10.8%
• Gestational HTN: ~10.8%
• Parity: Nulliparity: ~44.1%
• Alcohol in pregnancy: ~15.0%
	intake was excluded from the empty calories component.
	• Q1: Score of 37.5-64.4 (n=567)
	• Q2: Score of 64.5-71.7 (n=567)
	• Q3: Score of 71.8-78.6 (n=568)
	• Q4: Score of 78.7-94.2 (n=567)
	at 10-13wk gestation
	
	Dietary assessment methods:
	Validated, 147 item Block FFQ administered at visit 1 (gestational wks 10–13). Nutrient intakes adjusted for total energy intake using the residual method. HEI-2010 score was calculated to assess diet quality.
	
	Outcome & assessment methods:
	NR
			• Start of follow up and exposure did not coincide and a potentially important amount of follow-up time was missing from analyses
			• Dietary intake self-reported from one FFQ
			• Important co-exposures not balanced across groups that were likely to impact the outcome and no adjustment techniques were used to correct for the issues
			• Outcome assessment methods NR
			• No pre-registered data analysis plan
			
			Summary:
			Maternal diet quality as measured by the HEI-2010 in early pregnancy was not associated with GWG.

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
Reduced Rank Regression			

Starling, 2017[11]; U.S.
PCS
 	
Baseline N=764 Analytic N=764 (Attrition: 0%)
 	
• Age: ~28.6y
• Race/Ethnicity:
  ○ Non-Hispanic White: 60%
  ○ Hispanic: 21%
  ○ Non-Hispanic Black: 12%
  ○ Other: 6%
• SES:
  ○ More than high school education: 75.3%
• Physical Activity: METs/wk: ~183
• Anthropometry: Prepregnancy BMI: 25.4± 5.9
• Smoking status: : ~5.5%
Parity: Multiparous: 62.8%
	Dietary Pattern(s):
	• Pattern 1: Higher consumption of healthy protein sources (poultry, nuts, and seeds), whole grains, cheese, citrus fruits, melons and berries, and other fruits, as well as added sugars and discretionary solid fat
	• Pattern 2: Higher consumption of eggs, potatoes, other starchy vegetables, discretionary solid fat, citrus, melons and berries, and non-whole grains and yogurt, added sugars, soy products (tofu and meat analogs), dark-green vegetables, and whole grains
	at 17wk gestation
	
	Dietary assessment methods:
	Dietary intake during pregnancy was assessed using the National Cancer Institute's Automated Self-Administered (ASA) 24h Recall. Analysis was restricted to participants who completed ≥2 ASA24s
	
	Outcome & assessment methods:
	Maternal weight during pregnancy was measured at each in-person study visit, and all weights measured at clinic visits were abstracted from the prenatal medical record by study personnel. Maternal weight before pregnancy was obtained either from medical records (~90%) or from participant self-report at the first study visit (~10%). GWG was calculated by subtracting the prepregnancy weight from the last recorded maternal weight
		Significant:
		GWG (kg)
		• Pattern 1, Ptrend<0.001
		  ○ T1: 12.4± 6.6
		  ○ T2: 14.7± 5.6
		  ○ T3: 15.7± 5.7
		
		• Pattern 2, Ptrend=0.03
		  ○ T1: 13.5± 6.1
		  ○ T2: 14.7± 5.6
		  ○ T3: 14.7± 6.5
		
		• Pattern 1 correlated with greater GWG, P<0.01
		  ○ r=0.22
		
		• Pattern 2 correlated with greater GWG, P=0.02
		  ○ r=0.09
		
		Non-significant:
			Key confounders accounted for:
			None
			
			Limitations:
			• GWG was not stratified by prepregnancy BMI and the analysis did not stratify weight gain by inadequate, adequate and excess
			• Co-exposures unbalanced between groups and likely to impact the outcome
			• Missingness by exposure NR
			• Unclear GDM prevalence
			• No pre-registered data analysis plan
			
			Summary:
			Women with greater adherence to pattern 1 (tertile 3) had significantly greater GWG (ptrend<0.001). Similarly, women with greater adherence to pattern 2 (tertile 2 and tertile 3) had significantly greater GWG (ptrend=0.03)

Study and Participant Characteristics[xi]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of Findings
	during pregnancy. Median number of days between the last recorded weight and delivery was 5 d (IQR 2–8 d).		

Table 4. Description of evidence on the relationship between diets based on macronutrient distribution during pregnancy and gestational weight gain[xii]

Study and Participant Characteristics[xiii]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of findings

Poston, 2013[24]; U.K.
RCT, UPBEAT
 	
Baseline N=183 Analytic N=140 (Attrition: 23%)
 	
• Age: ~30.5y
• Race/Ethnicity:
  ○ White: ~56%
  ○ Black: ~38%
  ○ Asian: ~2%
  ○ Other: ~4%
• SES:
  ○ Most deprived: ~56%
  ○ Single: ~46%
• Living arrangements (%):
  ○ With partner: ~74
  ○ With parents: ~11
• Housing (%):
  ○ Owned: ~26
• Physical Activity (n=140):
  ○ Sedentary (min/d): ~1169, Active: 221, Light: 181, MVPA: 41
• Anthropometry: BMI at ~17wk: ~36.3
	Macronutrient Proportions:
	• Control: 35.9% FAT, 48.2% CHO, 15.5% PRO (n=69)
	• Intervention: 32.5% FAT, 50.0% CHO, 17.1% PRO (n=71), also received PA intervention, to no effect
	from 17wk to 28wk gestation
	
	Dietary assessment methods:
	Women randomized to intervention of dietary and physical activity advice delivered by health trainers vs standard care.
	Diet assessed via repeated, triple pass, interviewer-led 24 hr recall data obtained at baseline (randomization) and 28wk gestation. Diet evaluated twice, one week apart in both the intervention and control group.
	
	Outcomes & assessment methods:
	GWG: Weight measured at baseline and 28wk
		Significant:
		
		Non-significant:
		• Weight at 17wk (kg), Mean± SD
		  ○ Control: 96.8± 16.2
		  ○ Intervention: 97.8± 12.7
		• GWG at 28wk between groups, P=NS
		  ○ Data NR
			Key confounders accounted for:
			Age, Race/ethnicity, SES, PA, GDM, Parity
			
			Limitations:
			• Exploratory study, no power calculation for GWG
			• Deviations from intended intervention unbalanced between groups and likely to have affected the outcome
			• Unclear how weight was assessed and GWG was calculated
			• No pre-registered data analysis plan
			
			Summary:
			Consuming a diet with >35% FAT versus a diet with <35% FAT during send trimester in obese women did not affect GWG.

[xii] BMI: body mass index, CHO: carbohydrate, d: day, GDM: gestational diabetes mellitus, g: gram, GWG: gestational weight gain, hr: hour, kg: kilogram(s), kJ: kilojoule(s), min: minute(s), MVPA: moderate to vigorous physical activity, PA: physical activity, PRO: protein, SES: socioeconomic status, UPBEAT: U.K. Pregnancies Better Eating and Activity Trial, wk: week(s), y: year(s)

[xiii] ± indicates values of Mean± SD unless otherwise noted

Study and Participant Characteristics[xiii]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of findings
• Smoking status: Never: 68%, Ex-smoker: 26%, Current: 7%, • GDM: at 28wk: 30% • Parity: 0: 44%, 1: 36%, ≥2: 21%			

Tajima, 2017[4]; Japan
PCS
 	
Baseline N=325 Analytic N=325
 	
• Age: ~33.5y
• Race/Ethnicity: 100% Japanese
• SES: NR
• Anthropometry: BMI at first prenatal visit: ~19.7
  ○ <18.5: 28.9%
  ○ ≥23: 5.5%
• GDM: 4% (n=540), Prepregnancy diabetes: 0%
• Parity: Primiparous: ~67.1%
	Macronutrient Proportions:
	• Bottom: 48.9% CHO, 35.1% FAT, 16.0% PRO (n=108)
	• Middle: 54.9% CHO, 30.3% FAT, 14.8% PRO (n=109)
	• Top: 61.5% CHO, 24.6% FAT, 13.9% PRO (n=108)
	at <16wk gestation
	
	Dietary assessment methods:
	Data grouped by tertile of CHO intake (bottom, middle, and top).
	3-d weighed dietary record on 2 weekdays and 1 weekend day, consecutive or nonconsecutive. Calories from each macronutrient calculated by multiplying g of macronutrients by calories/g (16.7 kJ/g for protein; 37.7 kJ/g for fat). Percentage of carbohydrate intake calculated by subtracting percentages of protein and fat intake from 100%.
	
	Outcomes & assessment methods:
	GWG: Weight measured by a registered nurse at the first prenatal visit and at 28wk. Rate of GWG/wk calculated from 1st prenatal visit to 28 wks of gestation.
		Significant:
		
		Non-significant:
		• GWG per week (kg), P=0.22
		  ○ Bottom: 0.3± 0.1
		  ○ Middle: 0.3± 0.1
		  ○ Top: 0.3± 0.1
			Key confounders accounted for:
			Race/ethnicity
			
			Limitations:
			• Self-reported dietary assessments during first trimester, when women may be prone to nausea
			• Start of follow up and exposure did not coincide and a potentially important amount of follow-up time is missing from analyses
			• Methods used to define exposure status are not clearly described and likely to result in some degree of random misclassification
			• GWG not stratified by prepregnancy BMI and unclear if it varied among underweight vs. healthy vs. overweight participants
			• GWG available for a small window (~7-28 wks) and weight gain during first trimester may have been minimal
			• Generalizability to U.S. population may be questionable given that ~1/3 of the participants were underweight
			• No information on whether the proportion of participants and reasons for missing data are similar across exposure groups

Study and Participant Characteristics[xiii]	Intervention/Exposure and Outcomes	Results	Confounding, Study Limitations, and Summary of findings
			Summary: GWG per week is not significantly different between tertiles of %CHO among Japanese pregnant women.

Table 5. Risk of bias for randomized controlled trials examining dietary patterns during pregnancy and gestational weight gain[xiv] [xv]

	Randomization	Deviations from intended interventions	Missing outcome data	Outcome measurement	Selection of the reported result
Al Wattar, 2019[22]	Low	Low	Low	Some concerns	Low
Assaf-Balut, 2017[26]	Low	High	Low	Low	Low
Van Horn, 2018[25]	Low	High	Low	Low	Low
Poston, 2013[24]	Low	High	Low	Some concerns	Some concerns
Assaf-Balut, 2019[23]	Low	High	Low	Low	High

Table 6. Risk of bias for observational studies examining dietary patterns during pregnancy and gestational weight gain[xvi]

	Confounding	Selection of participants	Classification of exposures	Deviations from intended exposures	Missing data	Outcome measurement	Selection of the reported result
Maugeri, 2019[19]	Serious	Serious	Low	Low	Low	Moderate	Serious
Okubo, 2012[3]	Serious	Serious	Serious	Serious	Moderate	Serious	Serious
Tielemans, 2015[8]	Serious	Moderate	Moderate	Low	Low	Serious	Serious
Wei, 2019[15]	Serious	Serious	Serious	No information	Serious	Moderate	Serious
Wesolowska, 2019[17]	Critical	Serious	Moderate	Serious	Moderate	No information	Serious
Ancira-Moreno, 2019[18]	Serious	Serious	Serious	Low	Moderate	Moderate	Serious
Emond, 2018[13]	Serious	Serious	Moderate	Low	No information	Low	Serious

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[xiv] A detailed description of the methodology used for assessing risk of bias is available on the NESR website: https://nesr.usda.gov/2020-dietary-guidelines-advisory-committee-systematic-reviews and in Part C of the following reference: Dietary Guidelines Advisory Committee. 2020. *Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and the Secretary of Health and Human Services*. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC.

[xv] Possible ratings of low, some concerns, or high determined using the "Cochrane Risk-of-bias 2.0" (RoB 2.0) (August 2016 version)" (Higgins JPT, Sterne JAC, Savović J, Page MJ, Hróbjartsson A, Boutron I, Reeves B, Eldridge S. A revised tool for assessing risk of bias in randomized trials In: Chandler J, McKenzie J, Boutron I, Welch V (editors). Cochrane Methods. *Cochrane Database of Systematic Reviews* 2016, Issue 10 (Suppl 1). dx.doi.org/10.1002/14651858.CD201601.)

[xvi] Possible ratings of low, moderate, serious, critical, or no information determined using the "Risk of Bias for Nutrition Observational Studies" tool (RoB-NObs) (Dietary Guidelines Advisory Committee. 2020. *Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and the Secretary of Health and Human Services*. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC.)

	Confounding	Selection of participants	Classification of exposures	Deviations from intended exposures	Missing data	Outcome measurement	Selection of the reported result
Fernández-Barrés, 2019[1]	Critical	Serious	Serious	Serious	Moderate	Moderate	Serious
Fulay, 2018[12]	Serious	Moderate	Moderate	Low	Moderate	Moderate	Serious
Gesteiro, 2012[2]	Serious	Serious	Serious	Low	Moderate	Low	Serious
Hillesund, 2018[21]	Serious	Moderate	Serious	Moderate	Serious	Moderate	Serious
Hillesund, 2014[5]	Serious	Serious	Moderate	Moderate	Moderate	Serious	Serious
Hrolfsdottir, 2019[14]	Serious	Moderate	Moderate	Low	Moderate	Moderate	Serious
Meinila, 2017[27]	Critical	Serious	Moderate	Moderate	No information	Moderate	Serious
Poon, 2013[7]	Critical	Serious	Serious	Serious	Moderate	Serious	Serious
Rifas-Shiman, 2009[6]	Serious	Serious	Moderate	Moderate	Moderate	Moderate	Serious
Sen, 2016[9]	Serious	Moderate	Moderate	Moderate	Moderate	Moderate	Serious
Yong, 2019[20]	Serious	Serious	Moderate	No information	No information	Moderate	Serious
Zhu, 2019[16]	Critical	Moderate	Moderate	Low	Low	No information	Serious
Starling, 2017[11]	Critical	Moderate	Moderate	Moderate	Moderate	Moderate	Serious
Tajima, 2017[4]	Critical	Moderate	Serious	Moderate	No information	Low	Serious

METHODOLOGY

The NESR team used its rigorous, protocol-driven methodology to support the 2020 Dietary Guidelines Advisory Committee in conducting this systematic review.

NESR's systematic review methodology involves:

- Developing a protocol,
- Searching for and selecting studies,
- Extracting data from and assessing the risk of bias of each included study,
- Synthesizing the evidence,
- Developing conclusion statements,
- Grading the evidence underlying the conclusion statements, and
- Recommending future research.

A detailed description of the methodology used in conducting this systematic review is available on the NESR website: https://nesr.usda.gov/2020-dietary-guidelines-advisory-committee-systematic-reviews, and can be found in the 2020 Dietary Guidelines Advisory Committee Report, Part C: Methodology.[xvii] Additional information about this systematic review, including a description of and rationale for any modifications made to the protocol can be found in the 2020 Dietary Guidelines Advisory Committee Report, Chapter 2. Food, Beverage, and Nutrient Consumption During Pregnancy.

Below are details of the final protocol for the systematic review described herein, including the:

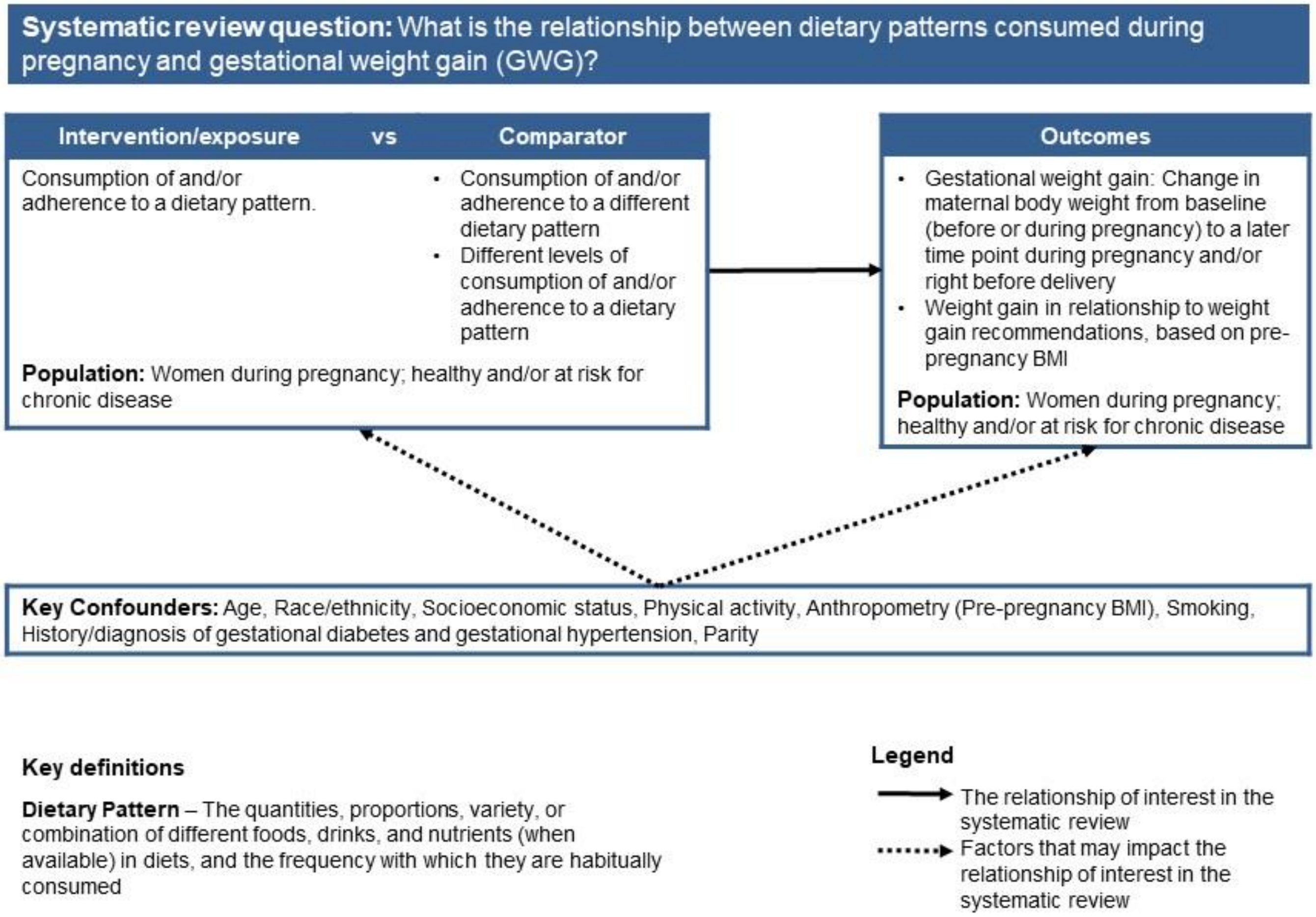
- Analytic framework
- Literature search and screening plan
- Literature search and screening results

ANALYTIC FRAMEWORK

The analytic framework (**Figure 1**) illustrates the overall scope of the systematic review, including the population, the interventions and/or exposures, comparators, and outcomes of interest. It also includes definitions of key terms and identifies key confounders considered in the systematic review. The inclusion and exclusion criteria that follow provide additional information about how parts of the analytic framework were defined and operationalized for the review.

[xvii] Dietary Guidelines Advisory Committee. 2020. *Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and the Secretary of Health and Human Services*. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC.

Figure 1: Analytic framework



LITERATURE SEARCH AND SCREENING PLAN

Inclusion and exclusion criteria

This table provides the inclusion and exclusion criteria for the systematic review. The inclusion and exclusion criteria are a set of characteristics used to determine which articles identified in the literature search were included in or excluded from the systematic review.

Table 7. Inclusion and exclusion criteria

Category	Inclusion Criteria	Exclusion Criteria
Study design	• Randomized controlled trials • Non-randomized controlled trials including quasi-experimental and controlled before-and-after studies • Prospective cohort studies • Retrospective cohort studies • Nested case-control studies	• Uncontrolled trials • Case-control studies • Cross-sectional studies • Uncontrolled before-and-after studies • Narrative reviews • Systematic reviews • Meta-analyses
Intervention/ exposure	• Studies that examine consumption of and/or adherence to a 1. Dietary pattern [i.e., the quantities, proportions, variety, or combination of different foods, drinks, and nutrients (when available) in diets, and the frequency with which they are habitually consumed] including, at a minimum, a description of the foods and beverages in the pattern and/or 2. Diet based on macronutrient distribution outside of the AMDR and • Include the macronutrient distribution of carbohydrate, fat, and protein of the diet, and • Include at least one macronutrient outside of the	• Studies that 1a. Do not provide a description of the dietary pattern, which at minimum, must include the foods and beverages in the pattern (i.e., studies that examine a labeled dietary pattern, but do not describe the foods and beverages consumed) 2a. Examine consumption of and/or adherence to a diet based on macronutrient proportion in which all macronutrients are within the AMDR 2b. Do not describe the entire macronutrient distribution of the diet (i.e., studies that only examine a single macronutrient in relation to outcomes)

Category	Inclusion Criteria	Exclusion Criteria
	acceptable macronutrient distribution range (AMDR[xviii])	
Comparator	Dietary patterns described by foods and beverages consumed: • Consumption of and/or adherence to a different dietary pattern • Different levels of consumption of and/or adherence to a dietary pattern Diets described by macronutrient distribution: • Different macronutrient distribution of carbohydrate, fat, and protein	• No comparator • Macronutrient proportion(s) of interest also outside the AMDR
Outcomes	• Change in maternal body weight from baseline (before or during pregnancy) to a later time point during pregnancy and/or right before delivery • Weight gain in relationship to weight gain recommendations, based on pre-pregnancy BMI	• Changes in weight from any point during pre-pregnancy or pregnancy to postpartum period
Date of publication	• January 2000-November 2019	• Articles published before January 2000 or after November 2019
Publication status	• Articles that have been peer-reviewed	• Articles that have not been peer-reviewed and are not published in peer-reviewed journals, including unpublished data, manuscripts, reports, abstracts, and conference proceedings
Language of publication	• Articles published in English	• Articles published in languages other than English

[xviii] Macronutrient percent of energy outside of the AMDR are as follows:

- Carbohydrate for all age groups: < 45 or > 65 percent of energy;
- Protein (age 19 years and older): < 10 or > 35 percent of energy;
- Fat (age 19 years and older): < 20 or > 35 percent of energy.

Institute of Medicine. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: The National Academies Press; 2002.

Category	Inclusion Criteria	Exclusion Criteria
Country[xix]	• Studies conducted in countries ranked as high or very high human development	• Studies conducted in countries ranked as medium or lower human development
Study participants	• Women during pregnancy	• Animal and in vitro models • Pregnancies conceived ONLY using Assisted Reproductive Technologies • Studies that exclusively enroll multiple gestation pregnancies • Studies that enroll both singleton and multiple pregnancies and do not account for singleton and multiple gestation in the design or analyses and only present aggregate findings
Health status of study participants	• Studies that enroll mothers who are healthy and/or at risk for chronic disease • Studies that enroll some mothers diagnosed with a disease • Studies that enroll some mothers who were severely undernourished prior to pregnancy • Studies that enroll some or all mothers classified as underweight, or obese prior to pregnancy	• Studies that ONLY enroll mothers who gave birth to preterm (< 37 weeks) • Studies that ONLY enroll mothers diagnosed with a disease, including severe undernutrition or hospitalized with an illness or injury •
Temporality	• Studies that assess exposure prior to outcome	• Studies that assess outcome prior to exposure

[xix] The Human Development classification was based on the Human Development Index (HDI) ranking from the year the study intervention occurred or data were collected (UN Development Program. HDI 1990-2017 HDRO calculations based on data from UNDESA (2017a), UNESCO Institute for Statistics (2018), United Nations Statistics Division (2018b), World Bank (2018b), Barro and Lee (2016) and IMF (2018). Available from: http://hdr.undp.org/en/data). If the study did not report the year in which the intervention occurred or data were collected, the HDI classification for the year of publication was applied. HDI values are available from 1980, and then from 1990 to present. If a study was conducted prior to 1990, the HDI classification from 1990 was applied. When a country was not included in the HDI ranking, the current country classification from the World Bank was used instead (The World Bank. World Bank country and lending groups. Available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world- country-and-lending-groups).

Electronic databases and search terms

PubMed

- Provider: U.S. National Library of Medicine
- Date(s) searched: June 26, 2019, Update: November 7, 2019
- Date range searched: January 1, 2000 – June 26, 2019; Update: January 1, 2000 – November 7, 2019
- Search terms:

#1 - dietary pattern* OR diet pattern* OR eating pattern* OR food pattern* OR diet quality[tiab] OR eating habit*[tiab] OR dietary habit* OR diet habit* OR food habit* OR “Feeding Behavior”[Mesh] OR feeding behavior*[tiab] OR beverage consumption[tiab] OR beverage habit*[tiab] OR beverage intake*[tiab] OR dietary profile* OR food profile[tiab] OR diet profile* OR eating profile* OR dietary guideline* OR dietary recommendation* OR dietary intake[tiab] OR food intake[tiab] OR food consumption[tiab] OR dietary consumption[tiab] OR eating frequenc* OR food frequenc*[tiab] OR eating style*[tiab] OR dietary change*[tiab] OR dietary choice*[tiab] OR food choice*[tiab] OR "Diet, Mediterranean"[Mesh] OR Mediterranean Diet*[tiab] OR "Dietary Approaches To Stop Hypertension"[Mesh] OR Dietary Approaches To Stop Hypertension Diet* OR DASH diet* OR "Diet, Gluten-Free"[Mesh] OR Gluten Free diet* OR prudent diet* OR "Diet, Paleolithic"[Mesh] OR Paleolithic Diet* OR "Diet, Vegetarian"[Mesh] OR vegetarian diet*[tiab] OR vegan diet* OR "Healthy Diet"[Mesh] OR plant based diet* OR "Diet, Western"[Mesh] OR western diet* OR "Diet, Carbohydrate-Restricted"[Mesh] OR low-carbohydrate diet* OR high carbohydrate diet* OR Ketogenic Diet* OR Nordic Diet* OR "Diet, Fat-Restricted"[Mesh] OR "Diet, High-Fat"[Mesh] OR "Diet, High-Protein"[Mesh] OR high protein diet*[tiab] OR high-fat diet* [tiab] OR low fat diet*[tiab] OR "Diet, Protein-Restricted"[Mesh] OR low protein diet* OR "Diet, Sodium-Restricted"[Mesh] OR low-sodium diet* OR low salt diet* OR (("Dietary Proteins"[Mesh] OR dietary protein*[tiab] OR "Dietary Carbohydrates"[Mesh] OR dietary carbohydrate*[tiab] OR "Dietary Fats"[Mesh] OR dietary fat*[tiab] OR hypocaloric OR hypo-caloric) AND (diet[tiab] OR diets[tiab] OR consumption[tiab] OR intake[tiab] OR supplement*[tiab])) OR (“Guideline Adherence"[Mesh] AND (diet[tiab] OR dietary[tiab] OR food[tiab] OR beverage[tiab])) OR (diet score* OR diet quality score* OR diet quality index* OR dietary habits score* OR kidmed OR diet index* OR dietary index* OR Food-based Index* OR diet quality index* OR food index* OR food score* OR Mediterranean diet score* OR MedDietScore OR healthy eating index[tiab] OR food frequency questionnaire* OR food frequency survey* OR “Nutrition Surveys”[Mesh] OR nutrition survey*[tiab] OR diet survey*[tiab] OR food survey* OR dietary questionnaire[tiab]) OR ((pattern[tiab] OR patterns[tiab] OR consumption[tiab] OR habit*[tiab]) AND (“Diet"[Mesh:NoExp] OR diet[tiab] OR diets[tiab] OR dietary[tiab] OR "Food"[Mesh] OR food[tiab] OR foods[tiab] OR "Beverages"[Mesh] OR beverage[tiab] OR beverages[tiab]))

#2 - "Pregnancy"[Mesh] OR “Pregnancy Complications”[Mesh] OR “Prenatal Exposure Delayed Effects”[Mesh] OR “Maternal Exposure”[Mesh] OR “pregnant women”[Mesh] OR pregnan*[tiab] OR pre-pregnancy[tiab] OR prenatal[tiab] OR pre-natal[tiab] OR maternal[tiab] OR mother[tiab] OR mothers[tiab] OR “Mothers”[Mesh] OR postpartum[tiab] OR perinatal[tiab] OR peri-natal[tiab] OR pre-conception[tiab] OR preconception[tiab] OR peri-conception[tiab] OR periconception[tiab] OR "Peripartum Period"[Mesh] OR peripartum[tiab] OR peri-partum[tiab] OR gestation*[tiab] OR natal[tiab] OR antenatal[tiab] OR ante-natal[tiab] OR puerperium[tiab] OR

"Maternal Nutritional Physiological Phenomena"[Mesh] OR "Postpartum Period"[Mesh] OR postpartum[tiab] OR post-partum[tiab] OR perinatal OR peri-natal OR puerperium[tiab] OR postpartal OR post-partal OR postnatal OR post delivery[tiab] OR after birth[tiab] OR "Lactation"[Mesh] OR lactation[tiab] OR lactating[tiab] OR "Breast Feeding"[Mesh] OR breastfeeding[tiab] OR breast-feeding[tiab] OR breast feed* OR breast-feed*[tiab] OR breastfed[tiab] OR breast-fed[tiab] OR breastfeed* OR "Milk, Human"[Mesh] OR human milk[tiab] OR nursing women[tiab]

#3 - "Gestational Weight Gain"[Mesh] OR gestational weight gain[tiab] OR "Weight Gain"[Mesh:NoExp] OR weight gain[tiab] OR "Obesity"[Mesh] OR obesity[tiab] OR obese[tiab] OR overweight[tiab] OR "body size"[tiab] OR "Body Size"[Mesh] OR overnutrition[tiab] OR "Overnutrition"[Mesh:NoExp] OR adipos*[tiab] OR anthropometry[tiab] OR anthropometric*[tiab] OR "Adiposity"[Mesh] OR adipose[tiab] OR body weight[tiab] OR "Body Weight"[Mesh] OR "Body Composition"[Mesh] OR body fat[tiab] OR weight[ti] OR "Body Mass Index"[Mesh] OR body mass index[tiab] OR BMI[tiab] OR weight status[tiab] OR "Adipose Tissue"[Mesh] OR healthy weight[tiab] OR body fat mass[tiab] OR weight change[tiab] OR weight changes[tiab] OR "Weight Loss"[Mesh] OR weight loss*[tiab] OR weight reduc*[tiab] OR body weight[tiab] OR "Weight Reduction Programs"[Mesh] OR "Body-Weight Trajectory"[Mesh] OR weight maint* OR "Diet, Reducing"[Mesh] OR diet reduc*[tiab] OR weight cycling[tiab] OR weight decreas*[tiab] OR weight watch*[tiab] OR weight control*[tiab] OR weight retention[tiab] OR (weight[tiab] AND (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain*[tiab] OR decreas*[tiab] OR watch OR control*[tiab] OR change*[tiab] OR gain[tiab]))

#4 - #1 AND #2 AND #3

#5 - #4 NOT ("Animals"[Mesh] NOT ("Animals"[Mesh] AND "Humans"[Mesh])) NOT (editorial[ptyp] OR comment[ptyp] OR news[ptyp] OR letter[ptyp] OR review[ptyp] OR systematic review[ptyp] OR systematic review[ti] OR meta-analysis[ptyp] OR meta-analysis[ti] OR meta-analyses[ti] OR retracted publication[ptyp] OR retraction of publication[ptyp] OR retraction of publication[tiab] OR retraction notice[ti]) Filters: Publication date from 2000/01/01 to 2019/06/26; English, Update: Filters: Publication date from 2000/01/01 to 2019/11/07; English

Cochrane Central Register of Controlled Trials (CENTRAL)

- Provider: John Wiley & Sons
- Date(s) searched: June 26, 2019; Update: November 7, 2019
- Date range searched: January 1, 2000 – June 26, 2019; Update: January 1, 2000 – November 7, 2019
- Search terms:

#1 - “dietary pattern*” OR “diet pattern*” OR “eating pattern*” OR “food pattern*” OR “diet quality” OR “eating habit*” OR “dietary habit*” OR “diet habit*” OR “food habit*” OR [mh “Feeding Behavior”] OR “feeding behavior*” OR “beverage consumption” OR “beverage habit*” OR “beverage intake*” OR “dietary profile*” OR “food profile” OR “diet profile*” OR “eating profile*” OR “dietary guideline*” OR “dietary recommendation*” OR “dietary intake” OR “food intake” OR “food consumption” OR “dietary consumption” OR “eating frequenc*” OR “food frequenc*” OR “eating style*” OR “dietary change*” OR “dietary choice*” OR “food choice*” OR [mh "Diet, Mediterranean"] OR “Mediterranean Diet*” OR [mh "Dietary Approaches To Stop Hypertension"] OR “Dietary Approaches To Stop Hypertension Diet*” OR “DASH diet*” OR [mh "Diet, Gluten-Free"] OR “Gluten Free diet*” OR “prudent diet*” OR [mh "Diet, Paleolithic"] OR

“Paleolithic Diet*” OR [mh "Diet, Vegetarian"] OR “vegetarian diet*” OR “vegan diet*” OR [mh "Healthy Diet"] OR “plant based diet*” OR [mh "Diet, Western"] OR “western diet*” OR [mh "Diet, Carbohydrate-Restricted"] OR “low-carbohydrate diet*” OR “high carbohydrate diet*” OR “Ketogenic Diet*” OR “Nordic Diet*” OR [mh "Diet, Fat-Restricted"] OR [mh "Diet, High-Fat"] OR [mh "Diet, High-Protein"] OR “high protein diet*” OR “high-fat diet*” OR “low fat diet*” OR [mh "Diet, Protein-Restricted"] OR “low protein diet*” OR [mh "Diet, Sodium-Restricted"] OR “low-sodium diet*” OR “low salt diet*”OR (([mh "Dietary Proteins"] OR “dietary protein*” OR [mh "Dietary Carbohydrates"] OR “dietary carbohydrate*” OR [mh "Dietary Fats"] OR “dietary fat*” OR hypocaloric OR hypo-caloric) NEAR (diet OR diets OR consumption OR intake OR supplement*)) OR ("guideline adherence") NEAR (diet OR dietary OR food OR beverage)) OR (“diet score” OR “diet scores” OR “diet quality score” OR “diet quality scores” OR “diet quality index” OR “dietary habits score” OR kidmed OR “diet index” OR “dietary index” OR “Food-based Index” OR “diet quality index” OR “food index” OR “food score” OR “food scores” OR “Mediterranean diet score” OR MedDietScore OR “healthy eating index” OR “food frequency questionnaire” OR “food frequency questionnaires” OR “food frequency survey” OR “food frequency surveys” OR [mh “Nutrition Surveys”] OR “nutrition survey” OR “nutrition surveys” OR “diet survey” OR “diet surveys” OR “food survey” OR “food surveys” OR “dietary questionnaire”):ti,ab,kw OR ((pattern OR patterns OR consumption OR habit*) NEAR ([mh ^Diet] OR diet OR diets OR dietary OR [mh Food] OR food OR foods OR [mh Beverages] OR beverage OR beverages)):ti,ab,kw

#2 - [mh "Pregnancy"] OR [mh "Pregnancy Complications"] OR [mh "Prenatal Exposure Delayed Effects"] OR [mh "Maternal Exposure"] OR [mh "Pregnant Women"] OR [mh "Mothers"] OR [mh "Peripartum Period"] OR [mh "Maternal Nutritional Physiological Phenomena"] OR [mh "Postpartum Period"] OR [mh Lactation] OR [mh "Breast Feeding"] OR [mh "Milk, Human"] OR (pregnancy OR pre-pregnancy OR prenatal OR pre-natal OR maternal OR mother OR mothers OR postpartum OR perinatal OR peri-natal OR pre-conception OR preconception OR peri-conception OR periconception OR peripartum OR peri-partum OR gestation* OR natal OR antenatal OR ante-natal OR puerperium OR postpartum OR post-partum OR perinatal OR peri-natal OR puerperium OR postpartal OR post-partal OR postnatal OR “post delivery” OR “after birth” OR lactation OR lactating OR breastfeeding OR breast-feeding OR breast feed* OR breast-feed* OR breastfed OR breast-fed OR breastfeed OR “human milk” OR “nursing women”):ti,ab,kw

#3 - (weight NEAR/4 (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain* OR decreas* OR watch OR control* OR change* OR gain)):ti,ab,kw OR (“gestational weight gain” OR “weight gain” OR obesity OR obese OR overweight OR "body size" OR overnutrition OR adipos* OR anthropometry OR anthropometric* OR adipose OR “body weight” OR “body fat” OR weight OR “body mass index” OR BMI OR “weight status” OR “healthy weight” OR “body fat mass” OR “weight change” OR “weight changes” OR “weight loss*” OR “weight reduct*” OR “body weight” OR “weight maint*” OR “diet reduc*” OR “weight cycling” OR “weight decreas*” OR “weight watch*” OR “weight control*” OR “weight retention”):ti,ab,kw OR [mh "Gestational Weight Gain"] OR [mh ^"Weight Gain"] OR [mh Obesity] OR [mh "Body Size"] OR [mh ^Overnutrition] OR [mh Adiposity] OR [mh "body weight"] OR [mh "Body Composition"] OR [mh "Body Mass Index"] OR [mh "Adipose Tissue"] OR [mh "Weight Loss"] OR [mh "Weight Reduction Programs"] OR [mh "Body-Weight Trajectory"] OR [mh "Diet, Reducing"]

#4 - #1 AND #2 AND #3

Filters: publication year from 2000 to 2019, Trials

Embase

- Provider: Elsevier
- Date(s) searched: June 26, 2019, Update: November 7, 2019
- Date range searched: January 1, 2000 – June 26, 2019; Update: January 1, 2000 – November 7, 2019
- Search terms:

#1 - 'feeding behavior'/exp OR 'mediterranean diet'/de OR 'dash diet'/de OR 'gluten free diet'/exp OR 'paleolithic diet'/de OR 'vegetarian diet'/exp OR 'healthy diet'/de OR 'western diet'/de OR 'low carbohydrate diet'/exp OR 'low fat diet'/de OR 'lipid diet'/exp OR 'protein diet'/exp OR 'protein restriction'/de OR 'sodium restriction'/de OR 'dietary pattern*':ab,ti OR 'diet pattern*':ab,ti OR 'eating pattern*':ab,ti OR 'food pattern*':ab,ti OR 'diet quality':ab,ti OR 'eating habit*':ab,ti OR 'dietary habit*':ab,ti OR 'diet habit*':ab,ti OR 'food habit*':ab,ti OR 'feeding behavior*':ab,ti OR 'beverage consumption':ab,ti OR 'beverage habit*':ab,ti OR 'beverage intake*':ab,ti OR 'dietary profile*':ab,ti OR 'food profile':ab,ti OR 'diet profile*':ab,ti OR 'eating profile*':ab,ti OR 'dietary guideline*':ab,ti OR 'dietary recommendation*':ab,ti OR 'dietary intake':ab,ti OR 'food intake':ab,ti OR 'food consumption':ab,ti OR 'dietary consumption':ab,ti OR 'eating frequenc*':ab,ti OR 'food frequenc*':ab,ti OR 'eating style*':ab,ti OR 'dietary change*':ab,ti OR 'dietary choice*':ab,ti OR 'food choice*':ab,ti OR 'mediterranean diet*':ab,ti OR 'dietary approaches to stop hypertension diet*':ab,ti OR 'dash diet*':ab,ti OR 'gluten free diet*':ab,ti OR 'prudent diet*':ab,ti OR 'paleolithic diet*':ab,ti OR 'vegetarian diet*':ab,ti OR 'vegan diet*':ab,ti OR 'plant based diet*':ab,ti OR 'western diet*':ab,ti OR 'low-carbohydrate diet*':ab,ti OR 'high carbohydrate diet*':ab,ti OR 'ketogenic diet*':ab,ti OR 'nordic diet*':ab,ti OR 'high protein diet*':ab,ti OR 'high-fat diet*':ab,ti OR 'low fat diet*':ab,ti OR 'low protein diet*':ab,ti OR 'low-sodium diet*':ab,ti OR 'low salt diet*':ab,ti OR ((('dietary protein*' OR 'dietary carbohydrate*' OR 'dietary fat*' OR hypocaloric OR 'hypo caloric') NEAR/6 (diet OR diets OR consumption OR intake OR supplement*)):ab,ti)* OR (('guideline adherence' NEAR/6 (diet OR dietary OR food OR beverage)):ab,ti) OR 'diet score*':ab,ti OR 'diet quality score*':ab,ti OR 'dietary habits score*':ab,ti OR kidmed:ab,ti OR 'diet index*':ab,ti OR 'dietary index*':ab,ti OR 'food-based index*':ab,ti OR 'diet quality index*':ab,ti OR 'food index*':ab,ti OR 'food score*':ab,ti OR 'mediterranean diet score*':ab,ti OR meddietscore:ab,ti OR 'healthy eating index':ab,ti OR 'food frequency questionnaire*':ab,ti OR 'food frequency survey*':ab,ti OR 'nutrition survey*':ab,ti OR 'diet survey*':ab,ti OR 'food survey*':ab,ti OR 'dietary questionnaire':ab,ti OR ((pattern OR patterns OR consumption OR habit*) NEAR/6 (diet OR diets OR dietary OR food OR foods OR beverage OR beverages)):ab,ti)

#2 - pregnancy:ab,ti OR 'pre pregnancy':ab,ti OR prenatal:ab,ti OR 'pre natal':ab,ti OR maternal:ab,ti OR mother:ab,ti OR mothers:ab,ti OR 'pre conception':ab,ti OR preconception:ab,ti OR 'peri conception':ab,ti OR periconception:ab,ti OR peripartum:ab,ti OR 'peri partum':ab,ti OR gestation*:ab,ti OR natal:ab,ti OR antenatal:ab,ti OR 'ante natal':ab,ti OR postpartum:ab,ti OR post-partum:ab,ti OR perinatal:ab,ti OR 'peri natal':ab,ti OR puerperium:ab,ti OR postpartal:ab,ti OR post-partal:ab,ti OR postnatal:ab,ti OR 'post delivery':ab,ti OR 'after birth':ab,ti OR lactation:ab,ti OR lactating:ab,ti OR breastfeeding:ab,ti OR breast-feeding:ab,ti OR 'breast feed*':ab,ti OR breastfed:ab,ti OR 'breast fed':ab,ti OR breastfeed:ab,ti OR 'human milk':ab,ti OR 'nursing women':ab,ti OR 'pregnancy'/exp/mj OR 'pregnancy complication'/exp/mj OR 'prenatal exposure'/mj OR 'maternal exposure'/mj OR 'pregnant woman'/mj OR 'mother'/mj OR 'puerperium'/exp/mj OR 'maternal nutrition'/mj OR 'lactation'/mj OR 'breast feeding'/exp/mj OR 'breast milk'/exp/mj

#3 - ((weight NEAR/4 (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain* OR decreas* OR watch OR control* OR change* OR gain)):ab,ti) OR 'gestational weight gain':ab,ti OR 'weight gain':ab,ti OR obesity:ab,ti OR obese:ab,ti OR overweight:ab,ti OR 'body size':ab,ti OR overnutrition:ab,ti OR adipos*:ab,ti OR anthropometry:ab,ti OR anthropometric*:ab,ti OR adipose:ab,ti OR 'body fat':ab,ti OR weight:ab,ti OR 'body mass index':ab,ti OR bmi:ab,ti OR 'weight status':ab,ti OR 'healthy weight':ab,ti OR 'body fat mass':ab,ti OR 'weight change':ab,ti OR 'weight changes':ab,ti OR 'weight loss*':ab,ti OR 'weight reduct*':ab,ti OR 'body weight':ab,ti OR 'weight maint*':ab,ti OR 'diet reduc*':ab,ti OR 'weight cycling':ab,ti OR 'weight decreas*':ab,ti OR 'weight watch*':ab,ti OR 'weight control*':ab,ti OR 'weight retention':ab,ti OR 'gestational weight gain'/mj OR 'body weight gain'/de OR 'obesity'/exp/mj OR 'body size'/mj OR 'overnutrition'/mj OR 'body weight'/exp/mj OR 'body composition'/exp/mj OR 'body mass'/de OR 'adipose tissue'/exp/mj OR 'body weight loss'/exp/mj OR 'weight loss program'/mj OR 'weight trajectory (body weight)'/mj OR 'low calorie diet'/exp/mj

#4 - #1 AND #2 AND #3

#5 - #4 AND ([article]/lim OR [article in press]/lim) AND [humans]/lim AND [english]/lim AND [2000-2019]/py NOT ([conference abstract]/lim OR [conference paper]/lim OR [editorial]/lim OR [erratum]/lim OR [letter]/lim OR [note]/lim OR [review]/lim OR [systematic review]/lim OR [meta analysis]/lim)

Cumulative Index of Nursing and Allied Health Literature (CINAHL Plus)

- Provider: EBSCOhost
- Date(s) searched: June 26, 2019; Update: November 7, 2019
- Date range searched: January 1, 2000 – June 26, 2019; Update: January 1, 2000 – November 7, 2019
- Search terms:

#1 - "dietary pattern*" OR "diet pattern*" OR "eating pattern*" OR "food pattern*" OR "diet quality" OR "eating habit*" OR "dietary habit*" OR "diet habit*" OR "food habit*" OR MH "Eating Behavior+" OR "feeding behavior*" OR "beverage consumption" OR "beverage habit*" OR "beverage intake*" OR "dietary profile*" OR "food profile*" OR "diet profile*" OR "eating profile*" OR "dietary guideline*" OR "dietary recommendation*" OR "dietary intake*" OR "food intake*" OR "food consumption" OR "dietary consumption" OR "eating frequenc*" OR "food frequenc*" OR "eating style*" OR "dietary change*" OR "dietary choice*" OR food choice*" OR MH "Diet, Mediterranean" OR "Mediterranean Diet*" OR MH "Dietary Approaches To Stop Hypertension" OR "Dietary Approaches To Stop Hypertension Diet*" OR "DASH diet*" OR MH "Diet, Gluten-Free" OR "Gluten Free diet*" OR "prudent diet*" OR MH "Diet, Paleolithic" OR "Paleolithic Diet*" OR MH "Diet, Vegetarian" OR "vegetarian diet*" OR "vegan diet*" OR MH "Healthy Diet" OR "plant based diet*" OR MH "Diet, Western" OR "western diet*" OR MH "Diet, Carbohydrate-Restricted" OR "low-carbohydrate diet*" OR "high carbohydrate diet*" OR "Ketogenic Diet*" OR "Nordic Diet*" OR MH "Diet, Fat-Restricted" OR MH "Diet, High-Fat" OR MH "Diet, High-Protein" OR "high protein diet*" OR "high-fat diet*" OR "low fat diet*" OR MH "Diet, Protein-Restricted" OR "low protein diet*" OR MH "Diet, Sodium-Restricted" OR "low-sodium diet*" OR "low salt diet*" OR ((MH "Dietary Proteins" OR "dietary protein*" OR MH "Dietary Carbohydrates" OR "dietary carbohydrate*" OR MH "Dietary Fats" OR "dietary fat*" OR hypocaloric OR hypo-caloric) AND (diet OR diets OR consumption OR intake OR supplementation)) OR (MH “Guideline Adherence" AND (diet OR dietary OR food OR beverage)) OR (“diet score*” OR “diet quality score*” OR “diet quality index*” OR “dietary habits score*” OR kidmed OR “diet index*” OR “dietary index*” OR “Food-based Index*” OR “diet quality index*” OR “food index*” OR “food score*” OR “Mediterranean diet score*” OR MedDietScore OR “healthy eating index” OR “food frequency questionnaire*” OR “food frequency survey*” OR MH “Nutrition Surveys” OR “nutrition survey*” OR “diet survey*” OR “food survey*” OR “dietary questionnaire*”) OR ((pattern OR patterns OR consumption OR habit*) AND (MH “Diet" OR diet OR diets OR dietary OR MH "Food" OR food OR foods OR MH "Beverages" OR beverage OR beverages))

#2 - postpartum OR post-partum OR MH "Postpartum Period" OR postpartal OR post-partal OR postnatal OR post-natal OR "post deliver*" OR "after birth" OR MH pregnancy OR MH “pregnancy complications” OR MH "Prenatal Exposure Delayed Effects" OR MH "Maternal Exposure" OR MH "pregnant women" OR pregnan* OR pre-pregnancy OR prepregnancy OR prenatal OR antenatal OR maternal OR mother OR mothers OR perinatal OR peri-natal OR peri-conception OR periconception OR MH "Peripartum Period" OR peripartum OR peri-partum OR gestation* OR natal OR puerperium OR MH "Maternal Nutritional Physiological Phenomena" OR MH "Breast Feeding"OR breastfeeding OR breast-feeding OR MH "Milk, Human" OR “human milk” OR MH Lactation OR lactation OR lactating OR breastfeeding OR “breast feed*” OR breast-feed* OR breastfed OR breast-fed OR breastfeed* OR "nursing women" OR “nursing mother*”

#3 - MH "Gestational Weight Gain" OR MH "Weight Gain" OR MH Obesity OR MH "Body Size" OR MH Overnutrition OR MH Adiposity OR MH "Body Weight” OR MH "Body Composition" OR MH "Body Mass Index" OR MH "Adipose Tissue" OR MH "Weight Loss" OR MH "Weight Reduction Programs" OR MH "Body-Weight Trajectory" OR MH "Diet, Reducing" OR gestational weight gain OR weight gain OR obesity OR obese OR overweight OR "body size" OR overnutrition OR adipos* OR anthropometry OR anthropometric* OR adipose OR “body weight” OR “body fat” OR weight OR “body mass index” OR BMI OR “weight status” OR “healthy weight” OR “body fat mass” OR “weight change” OR “weight changes” OR “weight loss*” OR “weight reduc*” OR “body weight” OR MH "Body-Weight Trajectory" OR “weight change*” OR “weight maint*” OR “diet reduc*” OR “weight cycling” OR “weight decreas*” OR “weight watch*” OR “weight control*” OR “weight retention” OR (weight N4 (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain* OR decreas* OR watch OR control* OR change* OR gain))

#4 - #1 AND #2 AND #3

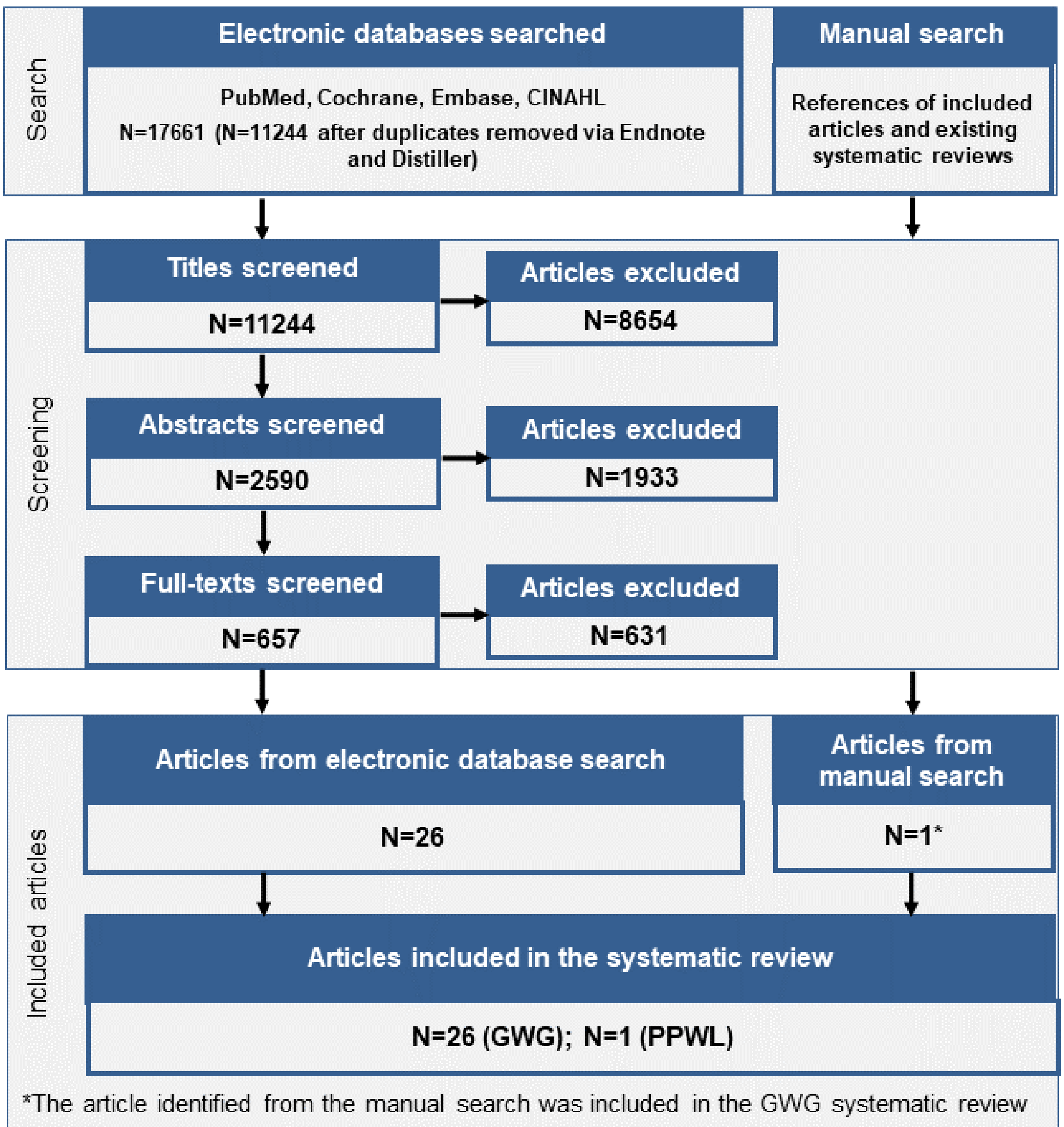
#5 - #4 NOT (MH "Literature Review" OR MH "Meta Analysis" OR MH "Systematic Review" OR MH "News" OR MH "Retracted Publication" OR MH "Retraction of Publication)

Filters: Published Date: 20000101 - 20190626; Update: Published Date: 20000101 - 20191107

LITERATURE SEARCH AND SCREENING RESULTS

The flow chart (**Figure 2**) below illustrates the literature search and screening results for articles examining the systematic review questions on dietary patterns and gestational weight gain (GWG), as well as dietary patterns and postpartum weight loss (PPWL). Articles on dietary patterns and GWG and dietary patterns and PPWL were searched for and screened together. This was done to leverage the overlap in topical areas and to improve efficiency. After the initial electronic database search (January 2000-June 2019), an updated search was conducted to also capture macronutrient distribution articles (January 2000-November 2019). The results of both electronic database searches, after removal of duplicates, were screened independently by two NESR analysts using a step-wise process by reviewing titles, abstracts, and full-texts to determine which articles met the inclusion criteria for each systematic review question depicted in the flow chart. Refer to **Table 8** for the rationale for exclusion for each excluded full-text article. A manual search was done to find articles that were not identified when searching the electronic databases; all manually identified articles are also screened to determine whether they meet criteria for inclusion.

Figure 2: Flow chart of literature search and screening results



Excluded articles

The table below lists the articles excluded after full-text screening, and includes columns for the categories of inclusion and exclusion criteria (see Table 7) that studies were excluded based on. At least one reason for exclusion is provided for each article, though this may not reflect all possible reasons for exclusion. Information about articles excluded after title and abstract screening is available upon request.

Table 8. Articles excluded after full text screening with rationale for exclusion

	Citation	Rationale
1.	Aaltonen, J, Ojala, T, Laitinen, K, Poussa, T, Ozanne, S, Isolauri, E. Impact of maternal diet during pregnancy and breastfeeding on infant metabolic programming: a prospective randomized controlled study. Eur J Clin Nutr. 2011. 65:10-9. doi:10.1038/ejcn.2010.225.	Intervention/Exposure; Outcome
2.	Abdel-Aziz, SB, Hegazy, IS, Mohamed, DA, Abu El Kasem, MMA, Hagag, SS. Effect of dietary counseling on preventing excessive weight gain during pregnancy. Public Health. 2018. 154:172-181. doi:10.1016/j.puhe.2017.10.014.	Intervention/Exposure
3.	Abreu, S, Santos, PC, Montenegro, N, Mota, J. Relationship between dairy product intake during pregnancy and neonatal and maternal outcomes among Portuguese women. Obes Res Clin Pract. 2017. 11:276-286. doi:10.1016/j.orcp.2016.07.001.	Intervention/Exposure
4.	Adair, LS, Kuzawa, CW, Borja, J. Maternal energy stores and diet composition during pregnancy program adolescent blood pressure. Circulation. 2001. 104:1034-9. doi:10.1161/hc3401.095037.	Outcome
5.	Adherence to Canada's Food Guide Recommendations during Pregnancy: Nutritional Epidemiology and Public Health. Curr Dev Nutr. 2017. 1:e000356. doi:10.3945/cdn.116.000356.	Outcome
6.	Ainscough, K, Kennelly, MA, O'Sullivan, EJ, Lindsay, KL, Gibney, ER, McCarthy, M, McAuliffe, FM. Impact of a smartphone app supporting a lifestyle intervention in overweight and obese pregnancy on on maternal health and lifestyle outcomes. American journal of obstetrics and gynecology. 2018. 218:S598-S599.	Abstract
7.	Akbari, Z, Mansourian, M, Kelishadi, R. Relationship of the intake of different food groups by pregnant mothers with the birth weight and gestational age: Need for public and individual educational programs. J Educ Health Promot. 2015. 4:23. doi:10.4103/2277-9531.154109.	Intervention/Exposure; Outcome
8.	Allman, BR, Diaz Fuentes, E, Williams, DK, Turner, DE, Andres, A, Borsheim, E. Obesity Status Affects the Relationship Between Protein Intake and Insulin Sensitivity in Late Pregnancy. Nutrients. 2019. 11. doi:10.3390/nu11092190.	Intervention/Exposure; Outcome

	Citation	Rationale
9.	Althuizen, E, van Poppel, MN, Seidell, JC, van Mechelen, W. Correlates of absolute and excessive weight gain during pregnancy. J Womens Health (Larchmt). 2009. 18:1559-66. doi:10.1089/jwh.2008.1275.	Intervention/Exposure
10.	Alves-Santos, NH, Cocate, PG, Benaim, C, Farias, DR, Emmett, PM, Kac, G. Prepregnancy Dietary Patterns and Their Association with Perinatal Outcomes: A Prospective Cohort Study. J Acad Nutr Diet. 2019. doi:10.1016/j.jand.2019.02.016.	Outcome
11.	Alves-Santos, NH, Cocate, PG, Eshriqui, I, Benaim, C, Barros, EG, Emmett, PM, Kac, G. Dietary patterns and their association with adiponectin and leptin concentrations throughout pregnancy: a prospective cohort. Br J Nutr. 2018. 119:320-329. doi:10.1017/s0007114517003580.	Population
12.	Alves-Santos, NH, Eshriqui, I, Franco-Sena, AB, Cocate, PG, Freitas-Vilela, AA, Benaim, C, Vaz Jdos, S, Castro, MB, Kac, G. Dietary intake variations from pre-conception to gestational period according to the degree of industrial processing: A Brazilian cohort. Appetite. 2016. 105:164-71. doi:10.1016/j.appet.2016.05.027.	Intervention/Exposure; Outcome
13.	Amezcua-Prieto, C, Martínez-Galiano, JM, Cano-Ibáñez, N, Olmedo-Requena, R, Bueno-Cavanillas, A, Delgado-Rodríguez, M. Types of carbohydrates intake during pregnancy and frequency of a small for gestational age newborn: A case-control study. Nutrients. 2019. 11. doi:10.3390/nu11030523.	Study Design
14.	Anand, SS, Gupta, M, Teo, KK, Schulze, KM, Desai, D, Abdalla, N, Zulyniak, M, de Souza, R, Wahi, G, Shaikh, M, Beyene, J, de Villa, E, Morrison, K, McDonald, SD, Gerstein, H. Causes and consequences of gestational diabetes in South Asians living in Canada: results from a prospective cohort study. CMAJ Open. 2017. 5:E604-e611. doi:10.9778/cmajo.20170027.	Intervention/Exposure; Outcome
15.	Anleu, E, Reyes, M, Araya, BM, Flores, M, Uauy, R, Garmendia, ML. Effectiveness of an Intervention of Dietary Counseling for Overweight and Obese Pregnant Women in the Consumption of Sugars and Energy. Nutrients. 2019. 11. doi:10.3390/nu11020385.	Intervention/Exposure
16.	Antal, M. Nutritional status of Hungarian pregnant women. Forum Nutr. 2003. 56:229-31.	Intervention/Exposure; Outcome
17.	Antonakou, A, Papoutsis, D, Panou, I, Chiou, A, Matalas, AL. Role of exclusive breastfeeding in energy balance and weight loss during the first six months postpartum. Clin Exp Obstet Gynecol. 2013. 40:485-8.	Intervention/Exposure
18.	Apolzan, JW, Myers, CA, Cowley, AD, Brady, H, Hsia, DS, Stewart, TM, Redman, LM, Martin, CK. Examination of the reliability and validity of the Mindful Eating Questionnaire in pregnant women. Appetite. 2016. 100:142-51. doi:10.1016/j.appet.2016.02.025.	Intervention/Exposure
19.	Arredondo, A, Torres, C, Orozco, E, Pacheco, S, Huang, F, Zambrano, E, Bolanos-Jimenez, F. Socio-economic indicators, dietary patterns, and physical activity as determinants of maternal obesity in middle-income countries: Evidences from a cohort study in Mexico. Int J Health Plann Manage. 2019. 34:e713-e725. doi:10.1002/hpm.2684.	Outcome

	Citation	Rationale
20.	Artal, R, Catanzaro, RB, Gavard, JA, Mostello, DJ, Friganza, JC. A lifestyle intervention of weight-gain restriction: diet and exercise in obese women with gestational diabetes mellitus. Appl Physiol Nutr Metab. 2007. 32:596-601. doi:10.1139/h07-024.	Intervention/Exposure
21.	Arvizu, M, Afeiche, MC, Hansen, S, Halldorsson, TF, Olsen, SF, Chavarro, JE. Fat intake during pregnancy and risk of preeclampsia: a prospective cohort study in Denmark. European Journal of Clinical Nutrition. 2019. 73:1040-1048. doi:10.1038/s41430-018-0290-z.	Outcome
22.	Arvizu, M, Stuart, J, Rich-Edwards, J, Gaskins, A, Rosner, B, Chavarro, J. Adherence to Pre-pregnancy DASH Dietary Pattern and Diet Recommendations from the American Heart Association and the Risk of Preeclampsia (OR35-06-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.OR35-06-19.	Abstract
23.	Asbjornsdottir, B, Ronneby, H, Vestgaard, M, Ringholm, L, Nichum, VL, Jensen, DM, Raben, A, Damm, P, Mathiesen, ER. Lower daily carbohydrate consumption than recommended by the Institute of Medicine is common among women with type 2 diabetes in early pregnancy in Denmark. Diabetes Res Clin Pract. 2019. 152:88-95. doi:10.1016/j.diabres.2019.05.012.	Intervention/Exposure; Health Status
24.	Asci, O, Rathfisch, G. Effect of lifestyle interventions of pregnant women on their dietary habits, lifestyle behaviors, and weight gain: a randomized controlled trial. J Health Popul Nutr. 2016. 35:7. doi:10.1186/s41043-016-0044-2.	Intervention/Exposure
25.	Asemi, Z, Samimi, M, Tabassi, Z, Esmaillzadeh, A. The effect of DASH diet on pregnancy outcomes in gestational diabetes: a randomized controlled clinical trial. Eur J Clin Nutr. 2014. 68:490-5. doi:10.1038/ejcn.2013.296.	Health Status
26.	Asemi, Z, Samimi, M, Tabassi, Z, Sabihi, S, Esmaillzadeh, A. A randomized controlled clinical trial investigating the effect of DASH diet on insulin resistance, inflammation, and oxidative stress in gestational diabetes. Nutrition. 2013. 29:619-624. doi:10.1016/j.nut.2012.11.020.	Health Status
27.	Ashman, AM, Collins, CE, Hure, AJ, Jensen, M, Oldmeadow, C. Maternal diet during early childhood, but not pregnancy, predicts diet quality and fruit and vegetable acceptance in offspring. Matern Child Nutr. 2016. 12:579-90. doi:10.1111/mcn.12151.	Outcome
28.	Ashman, AM, Collins, CE, Weatherall, L, Brown, LJ, Rollo, ME, Clausen, D, Blackwell, CC, Pringle, KG, Attia, J, Smith, R, Lumbers, ER, Rae, KM. A cohort of Indigenous Australian women and their children through pregnancy and beyond: the Gomeroi gaaynggal study. J Dev Orig Health Dis. 2016. 7:357-68. doi:10.1017/s204017441600009x.	Intervention/Exposure

	Citation	Rationale
29.	Assaf-Balut, C, de la Torre, NG, Fuentes, M, Durán, A, Bordiú, E, Del Valle, L, Valerio, J, Jiménez, I, Herraiz, MA, Izquierdo, N, Torrejón, MJ, de Miguel, MP, Barabash, A, Cuesta, M, Rubio, MA, Calle-Pascual, AL. A high adherence to six food targets of the mediterranean diet in the late first trimester is associated with a reduction in the risk of materno-foetal outcomes: The st. carlos gestational diabetes mellitus prevention study. Nutrients. 2019. 11. doi:10.3390/nu11010066.	Study Design; Temporality
30.	Assaf-Balut, C, Garcia de la Torre, N, Duran, A, Fuentes, M, Bordiu, E, Del Valle, L, Valerio, J, Familiar, C, Jimenez, I, Herraiz, MA, Izquierdo, N, Torrejon, MJ, Runkle, I, de Miguel, MP, Moraga, I, Montanez, MC, Barabash, A, Cuesta, M, Rubio, MA, Calle-Pascual, AL. Medical nutrition therapy for gestational diabetes mellitus based on Mediterranean Diet principles: a subanalysis of the St Carlos GDM Prevention Study. BMJ Open Diabetes Res Care. 2018. 6:e000550. doi:10.1136/bmjdrc-2018-000550.	Intervention/Exposure; Outcome
31.	Aydin, EK, Ozturk, S. Assessment of the Diets and Weights of Primiparous and Multiparous Pregnant Women in the Last Trimester. International Journal of Caring Sciences. 2016. 9:1033-1039.	Study Design; Intervention/Exposure
32.	Babaei, M, Banaem, LM. Nutritional status of pregnant women and urine calcium-to-creatinine ratio during 24th-28th weeks of pregnancy and their relationship with the incidence of hypertensive disorders during pregnancy. Journal of Kermanshah University of Medical Sciences. 2018. 22. doi:10.5812/jkums.69638.	Outcome
33.	Badon, SE, Miller, RS, Qiu, C, Sorensen, TK, Williams, MA, Enquobahrie, DA. Maternal healthy lifestyle during early pregnancy and offspring birthweight: differences by offspring sex. J Matern Fetal Neonatal Med. 2018. 31:1111-1117. doi:10.1080/14767058.2017.1309383.	Outcome; Comparator
34.	Bao, W, Bowers, K, Tobias, DK, Olsen, SF, Chavarro, J, Vaag, A, Kiely, M, Zhang, C. Prepregnancy low-carbohydrate dietary pattern and risk of gestational diabetes mellitus: a prospective cohort study. Am J Clin Nutr. 2014. 99:1378-84. doi:10.3945/ajcn.113.082966.	Outcome
35.	Bao, W. Comment on Koivusalo et al. Gestational diabetes mellitus can be prevented by lifestyle intervention: the finnish gestational diabetes prevention study (RADIEL): a randomized controlled Trial. Diabetes Care 2016; 39: 24-30. Diabetes Care. 39 (8) (pp e125), 2016. doi:10.2337/dc16-0665.	Study Design
36.	Bao, W, Tobias, DK, Hu, FB, Chavarro, J, Zhang, C. Pre-pregnancy potato consumption and risk of gestational diabetes mellitus. BMJ: British Medical Journal. 2016. 352:h6898-h6898.	Outcome
37.	Barbieri, MA, Portella, AK, Silveira, PP, Bettiol, H, Agranonik, M, Silva, AA, Goldani, MZ. Severe intrauterine growth restriction is associated with higher spontaneous carbohydrate intake in young women. Pediatr Res. 2009. 65:215-20. doi:10.1203/PDR.0b013e31818d6850.	Study Design; Outcome

	Citation	Rationale
38.	Barebring, L, Brembeck, P, Lof, M, Brekke, HK, Winkvist, A, Augustin, H. Food intake and gestational weight gain in Swedish women. Springerplus. 2016. 5:377. doi:10.1186/s40064-016-2015-x.	Study Design; Intervention/Exposure
39.	Barnes, RA, Edghill, N, Mackenzie, J, Holters, G, Ross, GP, Jalaludin, BB, Flack, JR. Predictors of large and small for gestational age birthweight in offspring of women with gestational diabetes mellitus. Diabetic Medicine. 2013. 30:1040-1046. doi:10.1111/dme.12207.	Intervention/Exposure; Outcome
40.	Bawadi, HA, Al-Kuran, O, Al-Bastoni, LA, Tayyem, RF, Jaradat, A, Tuuri, G, Al-Beitawi, SN, Al-Mehaisen, LM. Gestational nutrition improves outcomes of vaginal deliveries in Jordan: an epidemiologic screening. Nutr Res. 2010. 30:110-7. doi:10.1016/j.nutres.2010.01.005.	Intervention/Exposure; Comparator
41.	Baykan, A, Yalcin, SS, Yurdakok, K. Does maternal iron supplementation during the lactation period affect iron status of exclusively breast-fed infants? Turk J Pediatr. 2006. 48:301-7.	Outcome
42.	Beardsall, A, Perreault, M, Farncombe, T, Vanniyasingam, T, Thabane, L, Teo, KK, Atkinson, SA. Maternal and child factors associated with bone length traits in children at 3years of age. Bone. 2019. 127:1-8. doi:10.1016/j.bone.2019.05.025.	Intervention/Exposure; Outcome
43.	Bechtel-Blackwell, DA. Computer-assisted self-interview and nutrition education in pregnant teens. Clin Nurs Res. 2002. 11:450-62. doi:10.1177/105477302237456.	Intervention/Exposure
44.	Belan, M, Carranza-Mamane, B, AinMelk, Y, Pesant, MH, Duval, K, Jean-Denis, F, Langlois, MF, Lavoie, H, Waddell, G, Baillargeon, JP. A lifestyle intervention targeting women with obesity and infertility improves their fertility outcomes, especially in women with PCOS: a randomized controlled trial. Fertility and sterility. 2019. 112:e40-. doi:10.1016/j.fertnstert.2019.07.234.	Conference abstract
45.	Ben Naftali, Y, Chermesh, I, Solt, I, Friedrich, Y, Lowenstein, L. Achieving the Recommended Gestational Weight Gain in High-Risk Versus Low-Risk Pregnancies. Isr Med Assoc J. 2018. 20:411-414.	Intervention/Exposure
46.	Benaim, C, Freitas-Vilela, AA, Pinto, TJP, Lepsch, J, Farias, DR, Dos Santos Vaz, J, El-Bacha, T, Kac, G. Early pregnancy body mass index modifies the association of pre-pregnancy dietary patterns with serum polyunsaturated fatty acid concentrations throughout pregnancy in Brazilian women. Matern Child Nutr. 2018. 14. doi:10.1111/mcn.12480.	Intervention/Exposure; Outcome
47.	Bennett, WL, Liu, SH, Yeh, HC, Nicholson, WK, Gunderson, EP, Lewis, CE, Clark, JM. Changes in weight and health behaviors after pregnancies complicated by gestational diabetes mellitus: the CARDIA study. Obesity (Silver Spring). 2013. 21:1269-75. doi:10.1002/oby.20133.	Intervention/Exposure; Diet measured (well) before pregnancy

	Citation	Rationale
48.	Berkey, CS, Tamimi, RM, Willett, WC, Rosner, B, Hickey, M, Toriola, AT, Lindsay Frazier, A, Colditz, GA. Dietary intake from birth through adolescence in relation to risk of benign breast disease in young women. Breast Cancer Res Treat. 2019. doi:10.1007/s10549-019-05323-8.	Population; Outcome
49.	Bertolotto, A, Volpe, L, Calianno, A, Pugliese, MC, Lencioni, C, Resi, V, Ghio, A, Corfini, M, Benzi, L, Del Prato, S, Di Cianni, G. Physical activity and dietary habits during pregnancy: effects on glucose tolerance. J Matern Fetal Neonatal Med. 2010. 23:1310-4. doi:10.3109/14767051003678150.	Intervention/Exposure; No association between diet and GWG examined
50.	Bertz, F, Winkvist, A, Brekke, HK. Sustainable weight loss among overweight and obese lactating women is achieved with an energy-reduced diet in line with dietary recommendations: results from the LEVA randomized controlled trial. J Acad Nutr Diet. 2015. 115:78-86. doi:10.1016/j.jand.2014.05.017.	Outcome
51.	Black, MM, Papas, MA, Bentley, ME, Cureton, P, Saunders, A, Le, K, Anliker, J, Robinson, N. Overweight adolescent African-American mothers gain weight in spite of intentions to lose weight. J Am Diet Assoc. 2006. 106:80-7. doi:10.1016/j.jada.2005.09.049.	Population
52.	Blumfield, ML, Hure, AJ, MacDonald-Wicks, LK, Smith, R, Simpson, SJ, Giles, WB, Raubenheimer, D, Collins, CE. Dietary balance during pregnancy is associated with fetal adiposity and fat distribution. Am J Clin Nutr. 2012. 96:1032-41. doi:10.3945/ajcn.111.033241.	Outcome; Comparator
53.	Blumfield, ML, Schreurs, M, Rollo, ME, MacDonald-Wicks, LK, Kokavec, A, Collins, CE. The association between portion size, nutrient intake and gestational weight gain: a secondary analysis in the WATCH study 2006/7. J Hum Nutr Diet. 2016. 29:271-80. doi:10.1111/jhn.12330.	Intervention/Exposure; Outcome
54.	Bo, S, Menato, G, Lezo, A, Signorile, A, Bardelli, C, De Michieli, F, Massobrio, M, Pagano, G. Dietary fat and gestational hyperglycaemia. Diabetologia. 2001. 44:972-8. doi:10.1007/s001250100590.	Intervention/Exposure; Outcome
55.	Bobinski, R, Mikulska, M, Mojska, H, Ulman-Wodarz, I, Sodowska, P. Assessment of the diet components of pregnant women as predictors of risk of preterm birth and born baby with low birth weight. Ginekol Pol. 2015. 86:292-9.	Intervention/Exposure; Outcome
56.	Boghossian, NS, Yeung, EH, Lipsky, LM, Poon, AK, Albert, PS. Dietary patterns in association with postpartum weight retention. Am J Clin Nutr. 2013. 97:1338-45. doi:10.3945/ajcn.112.048702.	Population
57.	Bonakdar, SA, Dorosty Motlagh, AR, Bagherniya, M, Ranjbar, G, Daryabeygi-Khotbehsara, R, Mohajeri, SAR, Safarian, M. Pre-pregnancy Body Mass Index and Maternal Nutrition in Relation to Infant Birth Size. Clin Nutr Res. 2019. 8:129-137. doi:10.7762/cnr.2019.8.2.129.	Study Design; Outcome

	Citation	Rationale
58.	Bouwland-Both, MI, Steegers-Theunissen, RP, Vujkovic, M, Lesaffre, EM, Mook-Kanamori, DO, Hofman, A, Lindemans, J, Russcher, H, Jaddoe, VW, Steegers, EA. A periconceptional energy-rich dietary pattern is associated with early fetal growth: the Generation R study. Bjog. 2013. 120:435-45. doi:10.1111/1471-0528.12086.	Outcome
59.	Brandhagen, M, Lissner, L, Brantsaeter, AL, Meltzer, HM, Haggkvist, AP, Haugen, M, Winkvist, A. Breast-feeding in relation to weight retention up to 36 months postpartum in the Norwegian Mother and Child Cohort Study: modification by socio-economic status? Public Health Nutr. 2014. 17:1514-23. doi:10.1017/s1368980013001869.	Intervention/Exposure
60.	Brantsæter, AL, Haugen, M, Myhre, R, Sengpiel, V, Englund-Ögge, L, Nilsen, RM, Borgen, I, Duarte-Salles, T, Papadopoulou, E, Vejrup, K, Von Ruesten, A, Hillesund, ER, Birgisdottir, BE, Magnus, P, Trogstad, L, Jacobsson, B, Bacelis, J, Myking, S, Knutsen, HK, Kvalem, HE, Alexander, J, Mendez, M, Meltzer, HM. Diet matters, particularly in pregnancy – Results from MoBa studies of maternal diet and pregnancy outcomes. Norsk Epidemiologi. 2014. 24:63-77.	Study Design
61.	Brekke, HK, Bertz, F, Rasmussen, KM, Bosaeus, I, Ellegård, L, Winkvist, A. Diet and exercise interventions among overweight and obese lactating women: Randomized trial of effects on cardiovascular risk factors. PLoS ONE. 2014. 9. doi:10.1371/journal.pone.0088250.	Outcome
62.	Briley, C, Flanagan, NL, Lewis, NM. In-home prenatal nutrition intervention increased dietary iron intakes and reduced low birthweight in low-income African-American women. Journal of the American Dietetic Association. 2002. 102:984-987.	Intervention/Exposure
63.	Broekhuizen, K, Simmons, D, Devlieger, R, van Assche, A, Jans, G, Galjaard, S, Corcoy, R, Adelantado, JM, Dunne, F, Desoye, G, Harreiter, J, Kautzky-Willer, A, Damm, P, Mathiesen, ER, Jensen, DM, Andersen, LL, Lapolla, A, Dalfra, MG, Bertolotto, A, Wender-Ozegowska, E, Zawiejska, A, Hill, D, Snoek, FJ, Jelsma, JGM, Bosmans, JE, van Poppel, MNM, van Dongen, JM. Cost-effectiveness of healthy eating and/or physical activity promotion in pregnant women at increased risk of gestational diabetes mellitus: economic evaluation alongside the DALI study, a European multicenter randomized controlled trial. Int J Behav Nutr Phys Act. 2018. 15:23. doi:10.1186/s12966-018-0643-y.	Intervention/Exposure; Outcome
64.	Brustman, LE, Langer, O, Bimson, B, Scarpelli, S, El Daouk, M. Weight gain in gestational diabetes: the effect of treatment modality. J Matern Fetal Neonatal Med. 2016. 29:1025-9. doi:10.3109/14767058.2015.1034101.	Intervention/Exposure; Comparator
65.	Buckingham-Schutt, LM, Ellingson, LD, Vazou, S, Campbell, CG. The Behavioral Wellness in Pregnancy study: a randomized controlled trial of a multi-component intervention to promote appropriate weight gain. The American journal of clinical nutrition. 2019. 109:1071-1079. doi:10.1093/ajcn/nqy359.	Intervention/Exposure; Outcome

	Citation	Rationale
66.	Buhling, KJ, Elsner, E, Wolf, C, Harder, T, Engel, B, Wascher, C, Siebert, G, Dudenhausen, JW. No influence of high- and low-carbohydrate diet on the oral glucose tolerance test in pregnancy. Clin Biochem. 2004. 37:323-7. doi:10.1016/j.clinbiochem.2003.11.008.	Outcome
67.	Bzikowska-Jura, A, Czerwonogrodzka-Senczyna, A, Oledzka, G, Szostak-Wegierek, D, Weker, H, Wesolowska, A. Maternal Nutrition and Body Composition During Breastfeeding: Association with Human Milk Composition. Nutrients. 2018. 10. doi:10.3390/nu10101379.	Intervention/Exposure
68.	Cahill, JM, Freeland-Graves, JH, Shah, BS, Lu, H, Pepper, MR. Determinants of weight loss after an intervention in low-income women in early postpartum. J Am Coll Nutr. 2012. 31:133-43.	Population
69.	Caire-Juvera, G, Casanueva, E, Bolanos-Villar, AV, de Regil, LM, Calderon de la Barca, AM. No changes in weight and body fat in lactating adolescent and adult women from Mexico. Am J Hum Biol. 2012. 24:425-31. doi:10.1002/ajhb.22234.	Intervention/Exposure
70.	Cano Ibanez, N, Martinez Galiano, JM, Amezcua Prieto, C, Olmedo Requena, R, Bueno Cavanillas, A, Delgado Rodriguez, M. Meat and meat products intake in pregnancy and risk of small for gestational age infants. A case-control study. Nutr Hosp. 2019. 36:405-411. doi:10.20960/nh.2366.	Study Design
71.	Cao, LL, Yan, CH, Yu, XD, Tian, Y, Zhao, L, Liu, JX, Shen, XM. Relationship between serum concentrations of polychlorinated biphenyls and organochlorine pesticides and dietary habits of pregnant women in Shanghai. Sci Total Environ. 2011. 409:2997-3002. doi:10.1016/j.scitotenv.2011.04.040.	Outcome
72.	Carmichael, SL, Ma, C, Feldkamp, ML, Shaw, GM. Comparing Usual Dietary Intakes Among Subgroups of Mothers in the Year Before Pregnancy. Public Health Rep. 2019. 134:155-163. doi:10.1177/0033354918821078.	Study Design; Outcome
73.	Carmichael, SL, Yang, W, Gilboa, S, Ailes, E, Correa, A, Botto, LD, Feldkamp, ML, Shaw, GM. Elevated body mass index and decreased diet quality among women and risk of birth defects in their offspring. Birth Defects Res A Clin Mol Teratol. 2016. 106:164-71. doi:10.1002/bdra.23471.	Study Design; Outcome
74.	Castro, MB, Kac, G, Sichieri, R. Assessment of protein intake during pregnancy using a food frequency questionnaire and the effect on postpartum body weight variation. Cad Saude Publica. 2010. 26:2112-20.	Intervention/Exposure; Country
75.	Castro, MBT, Cunha, DB, Araujo, MC, Bezerra, IN, Adegboye, ARA, Kac, G, Sichieri, R. High protein diet promotes body weight loss among Brazilian postpartum women. Matern Child Nutr. 2018. :e12746. doi:10.1111/mcn.12746.	Population

	Citation	Rationale
76.	Castro, PS, de Castro, MBT, Kac, G. Adherence to dietary recommendations by the Institute of Medicine and the effect on body weight during pregnancy. Cadernos de Saude Publica. 2013. 29:1311-1321. doi:10.1590/S0102-311X2013000700006.	Not English
77.	Centofanti, SF, Francisco, RPV, Phillippi, ST, Galletta, MAK, Sousa, AMS, Rodrigues, AS, Curi, R, Brizot, ML. Maternal nutrient intake and fetal gastroschisis: A case-control study. Am J Med Genet A. 2019. doi:10.1002/ajmg.a.61265.	Study Design
78.	Chan, GM, McElligott, K, McNaught, T, Gill, G. Effects of dietary calcium intervention on adolescent mothers and newborns: a randomized controlled trial. Obstetrics and gynecology. 2006. 108:565-571. doi:10.1097/01.AOG.0000231721.42823.9e.	Intervention/Exposure; Association btw macronutrient proportion and GWG not analyzed
79.	Chan, KK, Ho, LF, Lao, TT. Nutritional intake and placental size in gestational diabetic pregnancies--a preliminary observation. Placenta. 2003. 24:985-8.	Outcome
80.	Chandler-Laney, PC, Schneider, CR, Gower, BA, Granger, WM, Mancuso, MS, Biggio, JR. Association of late-night carbohydrate intake with glucose tolerance among pregnant African American women. Matern Child Nutr. 2016. 12:688-98. doi:10.1111/mcn.12181.	Outcome; Comparator
81.	Chang, MW, Brown, R, Nitzke, S. Fast Food Intake in Relation to Employment Status, Stress, Depression, and Dietary Behaviors in Low-Income Overweight and Obese Pregnant Women. Matern Child Health J. 2016. 20:1506-17. doi:10.1007/s10995-016-1949-5.	Intervention/Exposure
82.	Chang, MW, Nitzke, S, Brown, R. Design and outcomes of a Mothers In Motion behavioral intervention pilot study. J Nutr Educ Behav. 2010. 42:S11-21. doi:10.1016/j.jneb.2010.01.010.	Intervention/Exposure; Population
83.	Chang, MW, Schaffir, J, Brown, R, Wegener, DT. Mediation by self-efficacy in the relation between social support and dietary intake in low-income postpartum women who were overweight or obese. Appetite. 2019. 140:248-254. doi:10.1016/j.appet.2019.05.031.	Intervention/Exposure
84.	Chang, MW, Tan, A, Schaffir, J. Relationships between stress, demographics and dietary intake behaviours among low-income pregnant women with overweight or obesity. Public Health Nutr. 2019. 22:1066-1074. doi:10.1017/s1368980018003385.	Study Design; Outcome
85.	Charo, L, Lacoursiere, DY. Introduction: obesity and lifestyle issues in women. Clin Obstet Gynecol. 2014. 57:433-45. doi:10.1097/grf.0000000000000040.	Study Design; Diet assessed at same time as final weight
86.	Chatzi, Leda, Garcia, Raquel, Roumeliotaki, Theano, Basterrechea, Mikel, Begiristain, Haizea, Iñiguez, Carmen, Vioque, Jesus, Kogevinas, Manolis, Sunyer, Jordi. Mediterranean diet adherence during pregnancy and risk of wheeze and eczema in the first year of life: INMA (Spain) and RHEA (Greece) mother–child cohort studies. British Journal of Nutrition. 2013. 110:2058-2068. doi:10.1017/S0007114513001426.	Outcome
87.	Chen, GW, Ding, WH, Ku, HY, Chao, HR, Chen, HY, Huang, MC, Wang, SL. Alkylphenols in human milk and their relations to dietary habits in central Taiwan. Food Chem Toxicol. 2010. 48:1939-44. doi:10.1016/j.fct.2010.04.038.	Outcome

	Citation	Rationale
88.	Chen, H, Wang, P, Han, Y, Ma, J, Troy, FA, 2nd, Wang, B. Evaluation of dietary intake of lactating women in China and its potential impact on the health of mothers and infants. BMC Womens Health. 2012. 12:18. doi:10.1186/1472-6874-12-18.	Outcome; Comparator
89.	Chen, LW, Aris, IM, Bernard, JY, Tint, MT, Chia, A, Colega, M, Gluckman, PD, Shek, LP, Saw, SM, Chong, YS, Yap, F, Godfrey, KM, van Dam, RM, Chong, MF, Lee, YS. Associations of Maternal Dietary Patterns during Pregnancy with Offspring Adiposity from Birth Until 54 Months of Age. Nutrients. 2016. 9. doi:10.3390/nu9010002.	Study Design
90.	Chen, LW, Murrin, CM, Mehegan, J, Kelleher, CC, Phillips, CM. Maternal, but not paternal or grandparental, caffeine intake is associated with childhood obesity and adiposity: The Lifeways Cross-Generation Cohort Study. Am J Clin Nutr. 2019. 109:1648-1655. doi:10.1093/ajcn/nqz019.	Intervention/Exposure
91.	Chen, LW, Navarro, P, Murrin, CM, Mehegan, J, Kelleher, CC, Phillips, CM. Maternal Dietary Glycemic and Insulinemic Indexes Are Not Associated with Birth Outcomes or Childhood Adiposity at 5 Years of Age in an Irish Cohort Study. J Nutr. 2019. 149:1037-1046. doi:10.1093/jn/nxz025.	Outcome
92.	Chen, LW, Tint, MT, Fortier, MV, Aris, IM, Bernard, JY, Colega, M, Gluckman, PD, Saw, SM, Chong, YS, Yap, F, Godfrey, KM, Kramer, MS, van Dam, RM, Chong, MFF, Lee, YS. Maternal macronutrient intake during pregnancy is associated with neonatal abdominal adiposity: The growing up in singapore towards healthy outcomes (GUSTO) study. Journal of Nutrition. 2016. 146:1571-1579. doi:10.3945/jn.116.230730.	Study Design; Outcome
93.	Chen, Q, Feng, Y, Yang, H, Wu, W, Zhang, P, Wang, K, Wang, Y, Ko, J, Shen, J, Guo, L, Zhao, F, Du, W, Ru, S, Wang, S, Zhang, Y. A Vitamin Pattern Diet Is Associated with Decreased Risk of Gestational Diabetes Mellitus in Chinese Women: Results from a Case Control Study in Taiyuan, China. J Diabetes Res. 2019. 2019:5232308. doi:10.1155/2019/5232308.	Study Design; Intervention/Exposure
94.	Chen, X, Scholl, TO, Leskiw, M, Savaille, J, Stein, TP. Differences in maternal circulating fatty acid composition and dietary fat intake in women with gestational diabetes mellitus or mild gestational hyperglycemia. Diabetes Care. 2010. 33:2049-54. doi:10.2337/dc10-0693.	Outcome; Comparator
95.	Cheng, YW, Chung, JH, Kurbisch-Block, I, Inturrisi, M, Shafer, S, Caughey, AB. Gestational weight gain and gestational diabetes mellitus: perinatal outcomes. Obstetrics & Gynecology. 2008. 112:1015-1022.	Intervention/Exposure
96.	Chia, AR, de Seymour, JV, Colega, M, Chen, LW, Chan, YH, Aris, IM, Tint, MT, Quah, PL, Godfrey, KM, Yap, F, Saw, SM, Baker, PN, Chong, YS, van Dam, RM, Lee, YS, Chong, MF. A vegetable, fruit, and white rice dietary pattern during pregnancy is associated with a lower risk of preterm birth and larger birth size in a multiethnic Asian cohort: the Growing Up in Singapore Towards healthy Outcomes (GUSTO) cohort study. Am J Clin Nutr. 2016. 104:1416-1423. doi:10.3945/ajcn.116.133892.	Study Design

	Citation	Rationale
97.	Chia, AR, Tint, MT, Han, CY, Chen, LW, Colega, M, Aris, IM, Chua, MC, Tan, KH, Yap, F, Shek, LP, Chong, YS, Godfrey, KM, Fortier, MV, Lee, YS, Chong, MF. Adherence to a healthy eating index for pregnant women is associated with lower neonatal adiposity in a multiethnic Asian cohort: the Growing Up in Singapore Towards healthy Outcomes (GUSTO) Study. Am J Clin Nutr. 2018. 107:71-79. doi:10.1093/ajcn/nqx003.	Outcome; Temporality
98.	Chiu, YH, Williams, PL, Gillman, MW, Hauser, R, Rifas-Shiman, SL, Bellavia, A, Fleisch, AF, Oken, E, Chavarro, JE. Maternal intake of pesticide residues from fruits and vegetables in relation to fetal growth. Environ Int. 2018. 119:421-428. doi:10.1016/j.envint.2018.07.014.	Intervention/Exposure; Outcome
99.	Chong, MF, Chia, AR, Colega, M, Tint, MT, Aris, IM, Chong, YS, Gluckman, P, Godfrey, KM, Kwek, K, Saw, SM, Yap, F, van Dam, RM, Lee, YS. Maternal Protein Intake during Pregnancy Is Not Associated with Offspring Birth Weight in a Multiethnic Asian Population. J Nutr. 2015. 145:1303-10. doi:10.3945/jn.114.205948.	Intervention/Exposure; Outcome
100.	Chortatos, A, Haugen, M, Iversen, PO, Vikanes, A, Magnus, P, Veierod, MB. Nausea and vomiting in pregnancy: associations with maternal gestational diet and lifestyle factors in the Norwegian Mother and Child Cohort Study. Bjog. 2013. 120:1642-53. doi:10.1111/1471-0528.12406.	Intervention/Exposure; Outcome
101.	Clerget-Froidevaux, MS, Sachs, LM. High-fat diet and pregnancy: Are you ready to take risks for your offspring? Endocrinology. 2017. 158:2716-2718. doi:10.1210/en.2017-00611.	Study Design
102.	Coathup, V, Northstone, K, Izadi, H, Wheeler, S, Smith, L. Do Maternal Dietary Antioxidants Modify the Relationship Between Binge Drinking and Small for Gestational Age? Findings from a Longitudinal Cohort Study. Alcoholism: Clinical and Experimental Research. 2018. 42:2196-2204. doi:10.1111/acer.13864.	Outcome
103.	Coelho Nde, L, Cunha, DB, Esteves, AP, Lacerda, EM, Theme Filha, MM. Dietary patterns in pregnancy and birth weight. Rev Saude Publica. 2015. 49:62. doi:10.1590/s0034-8910.2015049005403.	No association with GWG as dependent variable
104.	Cohen, TR, Koski, KG. Limiting excess weight gain in healthy pregnant women: importance of energy intakes, physical activity, and adherence to gestational weight gain guidelines. J Pregnancy. 2013. 2013:787032. doi:10.1155/2013/787032.	Intervention/Exposure
105.	Cohen, TR, Plourde, H, Koski, KG. Are Canadian women achieving a fit pregnancy? A pilot study. Can J Public Health. 2010. 101:87-91.	Intervention/Exposure
106.	Colatrella, A, Framarino, M, Toscano, V, Bongiovanni, M, Festa, C, Mattei, L, Merola, G, Bitterman, O, Maravalle, M, Napoli, A. Continuous glucose monitoring during breastfeeding in women with recent gestational diabetes mellitus. Diabetes Technol Ther. 2012. 14:576-82. doi:10.1089/dia.2011.0266.	Intervention/Exposure; Outcome

	Citation	Rationale
107.	Colleran, HL, Lovelady, CA. Use of MyPyramid Menu Planner for Moms in a weight-loss intervention during lactation. J Acad Nutr Diet. 2012. 112:553-8. doi:10.1016/j.jand.2011.12.004.	Intervention/Exposure; Outcome
108.	Collins, CT, Chua, MC, Rajadurai, VS, McPhee, AJ, Miller, LN, Gibson, RA, Makrides, M. Higher protein and energy intake is associated with increased weight gain in pre-term infants. J Paediatr Child Health. 2010. 46:96-102. doi:10.1111/j.1440-1754.2009.01645.x.	Population; Outcome
109.	Colon-Ramos, U, Racette, SB, Ganiban, J, Nguyen, TG, Kocak, M, Carroll, KN, Volgyi, E, Tylavsky, FA. Association between dietary patterns during pregnancy and birth size measures in a diverse population in Southern US. Nutrients. 2015. 7:1318-32. doi:10.3390/nu7021318.	Outcome; Association btw DP and GWG not analyzed
110.	Conway, MC, Mulhern, MS, McSorley, EM, van Wijngaarden, E, Strain, JJ, Myers, GJ, Davidson, PW, Shamlaye, CF, Yeates, AJ. Dietary determinants of polyunsaturated fatty acid (PUFA) status in a high fish-eating cohort during pregnancy. Nutrients. 2018. 10. doi:10.3390/nu10070927.	Outcome
111.	Cormick, G, Betran, AP, Harbron, J, Dannemann Purnat, T, Parker, C, Hall, D, Seuc, AH, Roberts, JM, Belizan, JM, Hofmeyr, GJ. Are women with history of pre-eclampsia starting a new pregnancy in good nutritional status in South Africa and Zimbabwe? BMC Pregnancy Childbirth. 2018. 18:236. doi:10.1186/s12884-018-1885-z.	Intervention/Exposure; Comparator
112.	Courtney, A, O'Brien, E, McAuliffe, F. The DASH (Dietary Approaches to Stop Hypertension) dietary pattern and blood pressure in pregnancy. BJOG. 2019. 126:42-. doi:10.1111/1471-0528.15633.	Abstract
113.	Courville, AB, Harel, O, Lammi-Keefe, CJ. Consumption of a DHA-containing functional food during pregnancy is associated with lower infant ponderal index and cord plasma insulin concentration. Br J Nutr. 2011. 106:208-12. doi:10.1017/s0007114511000961.	Outcome
114.	Crume, TL, Brinton, JT, Shapiro, A, Kaar, J, Glueck, DH, Siega-Riz, AM, Dabelea, D. Maternal dietary intake during pregnancy and offspring body composition: The Healthy Start Study. Am J Obstet Gynecol. 2016. 215:609.e1-609.e8. doi:10.1016/j.ajog.2016.06.035.	Intervention/Exposure; Outcome
115.	Cuco, G, Arija, V, Iranzo, R, Vila, J, Prieto, MT, Fernandez-Ballart, J. Association of maternal protein intake before conception and throughout pregnancy with birth weight. Acta Obstet Gynecol Scand. 2006. 85:413-21. doi:10.1080/00016340600572228.	Outcome
116.	Cuco, G, Fernandez-Ballart, J, Sala, J, Viladrich, C, Iranzo, R, Vila, J, Arija, V. Dietary patterns and associated lifestyles in preconception, pregnancy and postpartum. Eur J Clin Nutr. 2006. 60:364-71. doi:10.1038/sj.ejcn.1602324.	Outcome; Comparator
117.	Cunha, MPL, Marques, RC, Dorea, JG. Influence of Maternal Fish Intake on the Anthropometric Indices of Children in the Western Amazon. Nutrients. 2018. 10. doi:10.3390/nu10091146.	Intervention/Exposure; Outcome

	Citation	Rationale
118.	D. Association of food choices during pregnancy with gestational diabetes mellitus. Clinical Diabetology. 2017. 6:131-135. doi:10.5603/DK.2017.0022.	Study Design; Intervention/Exposure
119.	Dammann, KW, Smith, C. Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight. Journal of Nutrition Education & Behavior. 2009. 41:242-253. doi:10.1016/j.jneb.2008.07.003.	Intervention/Exposure; Population
120.	Daundasekara, SS, Beasley, AD, O'Connor, DP, Sampson, M, Hernandez, D, Ledoux, T. Validation of the intuitive Eating Scale for pregnant women. Appetite. 2017. 112:201-209. doi:10.1016/j.appet.2017.02.001.	Intervention/Exposure
121.	Davis, JN, Shearrer, GE, Tao, W, Hurston, SR, Gunderson, EP. Dietary variables associated with substantial postpartum weight retention at 1-year among women with GDM pregnancy. BMC Obes. 2017. 4:31. doi:10.1186/s40608-017-0166-0.	Intervention/Exposure
122.	de Castro, MB, Freitas Vilela, AA, de Oliveira, AS, Cabral, M, de Souza, RA, Kac, G, Sichieri, R. Sociodemographic characteristics determine dietary pattern adherence during pregnancy. Public Health Nutr. 2016. 19:1245-51. doi:10.1017/s1368980015002700.	Study Design
123.	de Castro, MB, Kac, G, de Leon, AP, Sichieri, R. High-protein diet promotes a moderate postpartum weight loss in a prospective cohort of Brazilian women. Nutrition. 2009. 25:1120-8. doi:10.1016/j.nut.2009.02.006.	Intervention/Exposure; Population
124.	de Castro, MB, Sichieri, R, Barbosa Brito Fdos, S, Nascimento, S, Kac, G. Mixed dietary pattern is associated with a slower decline of body weight change during postpartum in a cohort of Brazilian women. Nutr Hosp. 2014. 29:519-25. doi:10.3305/nh.2014.29.3.7155.	Population; Country
125.	De Jersey, SusanJ, Ross, LyndaJ, Himstedt, Kellie, McIntyre, David H, Callaway, LeonieK. Weight gain and nutritional intake in obese pregnant women: Some clues for intervention. Nutrition & Dietetics. 2011. 68:53-59. doi:10.1111/j.1747-0080.2010.01470.x.	Comparator
126.	de la Torre, NG, Assaf-Balut, C, Jimenez Varas, I, Del Valle, L, Duran, A, Fuentes, M, Del Prado, N, Bordiu, E, Valerio, JJ, Herraiz, MA, Izquierdo, N, Torrejon, MJ, Cuadrado, MA, de Miguel, P, Familiar, C, Runkle, I, Barabash, A, Rubio, MA, Calle-Pascual, AL. Effectiveness of Following Mediterranean Diet Recommendations in the Real World in the Incidence of Gestational Diabetes Mellitus (GDM) and Adverse Maternal-Foetal Outcomes: A Prospective, Universal, Interventional Study with a Single Group. The St Carlos Study. Nutrients. 2019. 11. doi:10.3390/nu11061210.	Study Design; Intervention/Exposure
127.	Deierlein, AL, Siega-Riz, AM, Herring, A. Dietary energy density but not glycemic load is associated with gestational weight gain. Am J Clin Nutr. 2008. 88:693-9. doi:10.1093/ajcn/88.3.693.	Intervention/Exposure
128.	Del Prado, M, Villalpando, S, Lance, A, Alfonso, E, Demmelmair, H, Koletzko, B. Contribution of dietary and newly formed arachidonic acid to milk secretion in women on low fat diets. Adv Exp Med Biol. 2000. 478:407-8. doi:10.1007/0-306-46830-1_50.	Book chapter

	Citation	Rationale
129.	Della Libera, B, Ribeiro Baiao, M, de Souza Santos, MM, Padilha, P, Dutra Alves, P, Saunders, C. Adherence of pregnant women to dietary counseling and adequacy of total gestational weight gain. Nutr Hosp. 2011. 26:79-85.	Study Design; Intervention/Exposure
130.	Denguezli, W, Faleh, R, Fessi, A, Yassine, A, Hajjaji, A, Laajili, H, Sakouhi, M. Risk factors of fetal macrosomia: role of maternal nutrition. Tunis Med. 2009. 87:564-8.	Outcome; Country
131.	Deniz Ç, D, Özler, S, Sayın, FK, Eryılmaz, MA. Associations between night eating syndrome and metabolic parameters in pregnant women. Turk Jinekoloji ve Obstetrik Dernegi Dergisi. 2019. 16:107-111. doi:10.4274/tjod.galenos.2019.77864.	Study Design; Outcome
132.	Derbyshire, E, Davies, J, Costarelli, V, Dettmar, P. Prepregnancy body mass index and dietary intake in the first trimester of pregnancy. J Hum Nutr Diet. 2006. 19:267-73. doi:10.1111/j.1365-277X.2006.00705.x.	Study Design; Outcome
133.	deRosset, L, Berry, DC, Sanchez-Lugo, L, Ritter, K, Purdum, C, Santolim, V, Gilliland, R, Pender, L. Mama Sana .. Usted Sana: Lessons Learned From a Postpartum Weight Loss Intervention for Hispanic Women With Infants Six Months or Less. Hispanic Health Care International. 2013. 11:78-86. doi:10.1891/1540-4153.11.2.78.	Intervention/Exposure; Population
134.	DeSantiago, S, Alonso, L, Ramírez, I, Ortíz, N, Tovar, AR, Torres, N, Bourges, H. Metabolizable energy from a predominantly vegetable diet consumed by Mexican rural lactating women. Nutrition Research. 2000. 20:215-224. doi:10.1016/S0271-5317(99)00154-2.	Intervention/Exposure; Outcome
135.	Dhana, K, Haines, J, Liu, G, Zhang, C, Wang, X, Field, AE, Chavarro, JE, Sun, Q. Association between maternal adherence to healthy lifestyle practices and risk of obesity in offspring: results from two prospective cohort studies of mother-child pairs in the United States. Bmj. 2018. 362:k2486. doi:10.1136/bmj.k2486.	Outcome
136.	Dharod, JM, Croom, JE, Sady, CG. Food Insecurity: Its Relationship to Dietary Intake and Body Weight among Somali Refugee Women in the United States. Journal of Nutrition Education & Behavior. 2013. 45:47-53. doi:10.1016/j.jneb.2012.03.006.	Study Design; Outcome
137.	Di Carlo, C, Iannotti, G, Sparice, S, Chiacchio, MP, Greco, E, Tommaselli, GA, Nappi, C. The role of a personalized dietary intervention in managing gestational weight gain: a prospective, controlled study in a low-risk antenatal population. Archives of gynecology and obstetrics. 2014. 289:765-770. doi:10.1007/s00404-013-3054-y.	Intervention/Exposure; Comparator
138.	Diemert, A, Lezius, S, Pagenkemper, M, Hansen, G, Drozdowska, A, Hecher, K, Arck, P, Zyriax, BC. Maternal nutrition, inadequate gestational weight gain and birth weight: results from a prospective birth cohort. BMC Pregnancy Childbirth. 2016. 16:224. doi:10.1186/s12884-016-1012-y.	Intervention/Exposure; Comparator
139.	Dieting okay for breastfeeding mothers. J Natl Med Assoc. 2000. 92:A14.	Study Design; Commentary

	Citation	Rationale
140.	Dikensoy, E, Balat, O, Cebesoy, B, Ozkur, A, Cicek, H, Can, G. Effect of fasting during Ramadan on fetal development and maternal health. J Obstet Gynaecol Res. 2008. 34:494-8. doi:10.1111/j.1447-0756.2008.00814.x.	Intervention/Exposure
141.	Dodd, JM, Cramp, C, Sui, Z, Yelland, LN, Deussen, AR, Grivell, RM, Moran, LJ, Crowther, CA, Turnbull, D, McPhee, AJ, Wittert, G, Owens, JA, Robinson, JS. The effects of antenatal dietary and lifestyle advice for women who are overweight or obese on maternal diet and physical activity: the LIMIT randomised trial. BMC Med. 2014. 12:161. doi:10.1186/s12916-014-0161-y.	Outcome
142.	Dodd, JM, Deussen, AR, Mohamad, I, Rifas-Shiman, SL, Yelland, LN, Louise, J, McPhee, AJ, Grivell, RM, Owens, JA, Gillman, MW, Robinson, JS. The effect of antenatal lifestyle advice for women who are overweight or obese on secondary measures of neonatal body composition: the LIMIT randomised trial. Bjog. 2016. 123:244-53. doi:10.1111/1471-0528.13796.	Intervention/Exposure; Outcome
143.	Dodd, JM, Grivell, RM, Owens, JA. Antenatal Dietary and Lifestyle Interventions for Women Who are Overweight or Obese: outcomes from the LIMIT Randomized Trial. Current nutrition reports. 2014. 3:392-399. doi:10.1007/s13668-014-0101-7.	Intervention/Exposure
144.	Dodd, JM, Kannieappan, LM, Grivell, RM, Deussen, AR, Moran, LJ, Yelland, LN, Owens, JA. Effects of an antenatal dietary intervention on maternal anthropometric measures in pregnant women with obesity. Obesity (Silver Spring). 2015. 23:1555-62. doi:10.1002/oby.21145.	Intervention/Exposure
145.	Dodd, JM, Newman, A, Moran, LJ, Deussen, AR, Grivell, RM, Yelland, LN, Crowther, CA, McPhee, AJ, Wittert, G, Owens, JA, Turnbull, D, Robinson, JS. The effect of antenatal dietary and lifestyle advice for women who are overweight or obese on emotional well-being: the LIMIT randomized trial. Acta Obstet Gynecol Scand. 2016. 95:309-18. doi:10.1111/aogs.12832.	Intervention/Exposure; Outcome
146.	Dodd, JM. Dietary and lifestyle advice for pregnant women who are overweight or obese: the LIMIT randomized trial. Annals of nutrition & metabolism. 2014. 64:197-202. doi:10.1159/000365018.	Study Design; Intervention/Exposure
147.	Dominguez, LJ, Martinez-Gonzalez, MA, Basterra-Gortari, FJ, Gea, A, Barbagallo, M, Bes-Rastrollo, M. Fast food consumption and gestational diabetes incidence in the SUN project. PLoS One. 2014. 9:e106627. doi:10.1371/journal.pone.0106627.	Intervention/Exposure; Outcome
148.	Donazar-Ezcurra, M, Lopez-Del Burgo, C, Martinez-Gonzalez, MA, Basterra-Gortari, FJ, de Irala, J, Bes-Rastrollo, M. Pre-pregnancy adherences to empirically derived dietary patterns and gestational diabetes risk in a Mediterranean cohort: the Seguimiento Universidad de Navarra (SUN) project. Br J Nutr. 2017. 118:715-721. doi:10.1017/s0007114517002537.	Outcome

	Citation	Rationale
149.	Donazar-Ezcurra, M, Lopez-Del Burgo, C, Martinez-Gonzalez, MA, Basterra-Gortari, FJ, de Irala, J, Bes-Rastrollo, M. Soft drink consumption and gestational diabetes risk in the SUN project. Clin Nutr. 2018. 37:638-645. doi:10.1016/j.clnu.2017.02.005.	Intervention/Exposure; Outcome
150.	Donnelly, JM, Walsh, JM, Byrne, J, Molloy, EJ, McAuliffe, FM. Impact of maternal diet on neonatal anthropometry: a randomized controlled trial. Pediatr Obes. 2015. 10:52-6. doi:10.1111/j.2047-6310.2013.00216.x.	Intervention/Exposure
151.	Dos Santos, K, Tavares Patricio, P, Santana Vieira Lima, T, Cavalcante de Barros, D, Saunders, C. A pilot intervention to reduce postpartum weight retention at primary health care in Brazil. Nutr Hosp. 2019. doi:10.20960/nh.02508.	Comparator
152.	Drehmer, M, Camey, SA, Nunes, MA, Duncan, BB, Lacerda, M, Pinheiro, AP, Schmidt, MI. Fibre intake and evolution of BMI: from pre-pregnancy to postpartum. Public Health Nutr. 2013. 16:1403-13. doi:10.1017/s1368980012003849.	Study Design; Intervention/Exposure
153.	Drouillet, P, Forhan, A, De Lauzon-Guillain, B, Thiébaugeorges, O, Goua, V, Magnin, G, Schweitzer, M, Kaminski, M, Ducimetière, P, Charles, M. Maternal fatty acid intake and fetal growth: evidence for an association in overweight women. The 'EDEN mother-child' cohort (study of pre- and early postnatal determinants of the child's development and health). British Journal of Nutrition. 2009. 101:583-591. doi:10.1017/S0007114508025038.	Outcome; Comparator
154.	Drouillet, P, Kaminski, M, De Lauzon-Guillain, B, Forhan, A, Ducimetiere, P, Schweitzer, M, Magnin, G, Goua, V, Thiebaugeorges, O, Charles, MA. Association between maternal seafood consumption before pregnancy and fetal growth: evidence for an association in overweight women. The EDEN mother-child cohort. Paediatr Perinat Epidemiol. 2009. 23:76-86. doi:10.1111/j.1365-3016.2008.00982.x.	Outcome
155.	Dubois, L, Diasparra, M, Bédard, B, Colapinto, CK, Fontaine-Bisson, B, Tremblay, RE, Fraser, WD. Adequacy of nutritional intake during pregnancy in relation to prepregnancy BMI: results from the 3D Cohort Study. British Journal of Nutrition. 2018. 120:335-344. doi:10.1017/S0007114518001393.	Intervention/Exposure
156.	Dujmovic, M, Kresic, G, Mandic, ML, Kenjeric, D, Cvijanovic, O. Changes in dietary intake and body weight in lactating and non-lactating women: prospective study in northern coastal Croatia. Coll Antropol. 2014. 38:179-87.	Comparator; Not all lactating
157.	Durham, HA, Lovelady, CA, Brouwer, RJ, Krause, KM, Ostbye, T. Comparison of dietary intake of overweight postpartum mothers practicing breastfeeding or formula feeding. J Am Diet Assoc. 2011. 111:67-74. doi:10.1016/j.jada.2010.10.001.	Study Design; Outcome
158.	Easter, A, Naumann, U, Northstone, K, Schmidt, U, Treasure, J, Micali, N. A longitudinal investigation of nutrition and dietary patterns in children of mothers with eating disorders. J Pediatr. 2013. 163:173-8.e1. doi:10.1016/j.jpeds.2012.11.092.	Intervention/Exposure; Population

	Citation	Rationale
159.	Ebrahimi, F, Shariff, ZM, Tabatabaei, SZ, Fathollahi, MS, Mun, CY, Nazari, M. Relationship between sociodemographics, dietary intake, and physical activity with gestational weight gain among pregnant women in Rafsanjan City, Iran. J Health Popul Nutr. 2015. 33:168-76.	Study Design; Intervention/Exposure
160.	Eichler, J, Schmidt, R, Hiemisch, A, Kiess, W, Hilbert, A. Gestational weight gain, physical activity, sleep problems, substance use, and food intake as proximal risk factors of stress and depressive symptoms during pregnancy. BMC Pregnancy Childbirth. 2019. 19:175. doi:10.1186/s12884-019-2328-1.	Intervention/Exposure
161.	Ellery, THP, Sampaio, HAC, Carioca, AAF, Silva, Bydc, Alves, JAG, Da Silva Costa, F, Araujo Junior, E, Melo, MLP. Association between Dietary Glycemic Index and Excess Weight in Pregnant Women in the First Trimester of Pregnancy. Rev Bras Ginecol Obstet. 2019. 41:4-10. doi:10.1055/s-0038-1676096.	Study Design
162.	Elliott, SA, Pereira, LCR, McCargar, LJ, Prado, CM, Bell, RC. Trajectory and determinants of change in lean soft tissue over the postpartum period. Br J Nutr. 2019. 121:1137-1145. doi:10.1017/s0007114518002015.	Intervention/Exposure; Population
163.	Elvebakk, T, Mostad, IL, Morkved, S, Salvesen, KA, Stafne, SN. Dietary Intakes and Dietary Quality during Pregnancy in Women with and without Gestational Diabetes Mellitus-A Norwegian Longitudinal Study. Nutrients. 2018. 10. doi:10.3390/nu10111811.	Intervention/Exposure; Outcome
164.	Englund-Ogge, L, Brantsaeter, AL, Juodakis, J, Haugen, M, Meltzer, HM, Jacobsson, B, Sengpiel, V. Associations between maternal dietary patterns and infant birth weight, small and large for gestational age in the Norwegian Mother and Child Cohort Study. Eur J Clin Nutr. 2018. doi:10.1038/s41430-018-0356-y.	Outcome
165.	Eshriqui, I, Vilela, AA, Rebelo, F, Farias, DR, Castro, MB, Kac, G. Gestational dietary patterns are not associated with blood pressure changes during pregnancy and early postpartum in a Brazilian prospective cohort. Eur J Nutr. 2016. 55:21-32. doi:10.1007/s00394-014-0819-4.	Outcome
166.	Estimated dietary vitamin D intake during pregnancy. Proceedings of the nutrition society. 2017. Conference: Nutrition Society Irish Section Conference 2017: What Governs What We Eat? United Kingdom. 76:E62. doi:10.1017/S0029665117001355.	Abstract
167.	Facchinetti, F, Gambigliani Zoccoli, S, Petrella, E, Bertarini, V, Di Cerbo, L, Neri, I. 160: counseling lifestyle changes in overweight/obese pregnant women: a randomized controlled trial. American journal of obstetrics and gynecology. 2019. 220:S120-S121. doi:10.1016/j.ajog.2018.11.181.	Abstract
168.	Facchinetti, F, Vijay, V, Petrella, E, Gambigliani Zoccoli, S, Bertarini, V, Di Cerbo, L, Neri, I. 78: impact of glycemic-index(GI) reduction on birthweight in overweight/obese pregnant women enrolled in a lifestyle program. American journal of obstetrics and gynecology. 2019. 220:S62-. doi:10.1016/j.ajog.2018.11.086.	Abstract

	Citation	Rationale
169.	Fadakar, SK, Ghavi, A, Niknami, M, Kazemnejad, LE. Relationship between mothers’ gt<GT> nutritional status and weight gain during pregnancy with low birth weight. Journal of Guilan University of Medical Sciences. 2012. 21:27-35.	Not English
170.	Fadzil, F, Shamsuddin, K, Sharifa, EWP, Tamil, AM, Ahmad, S, Hayi, NSA, Samad, AA, Ismail, R, Shauki, NIA. Predictors of postpartum weight retention among urban Malaysian mothers: A prospective cohort study. Obesity Research & Clinical Practice. 2018. 12:493-499. doi:10.1016/j.orcp.2018.06.003.	Intervention/Exposure
171.	Fahey, CA, Chevrier, J, Crause, M, Obida, M, Bornman, R, Eskenazi, B. Seasonality of antenatal care attendance, maternal dietary intake, and fetal growth in the VHEMBE birth cohort, South Africa. PLoS ONE. 2019. 14. doi:10.1371/journal.pone.0222888.	Outcome; Country
172.	Fahey, MC, Wayne Talcott, G, Cox Bauer, CM, Bursac, Z, Gladney, L, Hare, ME, Harvey, J, Little, M, McCullough, D, Hryshko-Mullen, AS, Klesges, RC, Kocak, M, Waters, TM, Krukowski, RA. Moms fit 2 fight: Rationale, design, and analysis plan of a behavioral weight management intervention for pregnant and postpartum women in the U.S. military. Contemporary Clinical Trials. 2018. 74:46-54. doi:10.1016/j.cct.2018.09.012.	Intervention/Exposure; Outcome
173.	Fereidooni, B, Jenabi, E. The use of omega 3 on pregnancy outcomes: a single-center study. J Pak Med Assoc. 2014. 64:1363-5.	Intervention/Exposure; Outcome
174.	Ferland, S, O'Brien, HT. Maternal dietary intake and pregnancy outcome. J Reprod Med. 2003. 48:86-94.	Intervention/Exposure; Outcome
175.	Ferranti, EP, Hartman, TJ, Elliott, AJ, Mitchell, DC, Angal, J, Nickleach, D, Bellissimo, M, Breslow, R. Diet Quality of Pregnant American Indian Women in the Northern Plains. Prev Chronic Dis. 2019. 16:E53. doi:10.5888/pcd16.180536.	Outcome
176.	Ferrara, P, Sandullo, F, Di Ruscio, F, Franceschini, G, Peronti, B, Blasi, V, Bietolini, S, Ruggiero, A. The impact of lacto-ovo-/lacto-vegetarian and vegan diets during pregnancy on the birth anthropometric parameters of the newborn. J Matern Fetal Neonatal Med. 2019. :1-7. doi:10.1080/14767058.2019.1590330.	Outcome
177.	Fiese, BH, Musaad, S, Bost, KK, McBride, BA, Lee, SY, Teran-Garcia, M, Donovan, SM. The STRONG Kids 2 Birth Cohort Study: A Cell-to-Society Approach to Dietary Habits and Weight Trajectories across the First 5 Years of Life. Curr Dev Nutr. 2019. 3:nzz007. doi:10.1093/cdn/nzz007.	Intervention/Exposure; Outcome
178.	Florencio, TM, Bueno, NB, Clemente, AP, Albuquerque, FC, Britto, RP, Ferriolli, E, Sawaya, AL. Weight gain and reduced energy expenditure in low-income Brazilian women living in slums: a 4-year follow-up study. Br J Nutr. 2015. 114:462-71. doi:10.1017/s0007114515001816.	Intervention/Exposure; Population

	Citation	Rationale
179.	Flynn, A, Poston, L, Goff, L. The UK pregnancies better eating and activity trial (UPBEAT) intervention in women with obesity; nutritional responses according to ethnic and BMI sub-groups. BJOG: an international journal of obstetrics and gynaecology. Conference: 19th annual conference of the british maternal and fetal medicine society, BMFMS 2017. Netherlands. 2017. 124:98. doi:10.1111/1471-0528.14588.	Conference abstract
180.	Flynn, AC, Schneeberger, C, Seed, PT, Barr, S, Poston, L, Goff, LM. The Effects of the UK Pregnancies Better Eating and Activity Trial Intervention on Dietary Patterns in Obese Pregnant Women Participating in a Pilot Randomized Controlled Trial. Nutr Metab Insights. 2015. 8:79-86. doi:10.4137/nmi.S29529.	Outcome
181.	Flynn, AC, Seed, PT, Patel, N, Barr, S, Bell, R, Briley, AL, Godfrey, KM, Nelson, SM, Oteng-Ntim, E, Robinson, SM, Sanders, TA, Sattar, N, Wardle, J, Poston, L, Goff, LM. Dietary patterns in obese pregnant women; influence of a behavioral intervention of diet and physical activity in the UPBEAT randomized controlled trial. Int J Behav Nutr Phys Act. 2016. 13:124. doi:10.1186/s12966-016-0450-2.	Outcome
182.	Forbes, LE, Graham, JE, Berglund, C, Bell, RC. Dietary change during pregnancy and women's reasons for change. Nutrients. 2018. 10. doi:10.3390/nu10081032.	Study Design; Outcome
183.	Fowler, JK, Evers, SE, Campbell, MK. Inadequate dietary intakes among pregnant women. Can J Diet Pract Res. 2012. 73:72-7. doi:10.3148/73.2.2012.72.	Study Design; Outcome
184.	Fowles, ER, Gabrielson, M. First trimester predictors of diet and birth outcomes in low-income pregnant women. J Community Health Nurs. 2005. 22:117-30. doi:10.1207/s15327655jchn2202_5.	Outcome
185.	Fowles, ER, Timmerman, GM, Bryant, M, Kim, S. Eating at fast-food restaurants and dietary quality in low-income pregnant women. West J Nurs Res. 2011. 33:630-51. doi:10.1177/0193945910389083.	Outcome
186.	Fowles, ER, Walker, LO. Correlates of dietary quality and weight retention in postpartum women. J Community Health Nurs. 2006. 23:183-97. doi:10.1207/s15327655jchn2303_5.	Population
187.	Fukuda, Y, Yamamoto, S, Nishida, K, Takaoka, Y, Kameda, M. A study on the effect of nutrient intake on the body mass index of mothers of children with food allergies. Asian Pac J Allergy Immunol. 2019. doi:10.12932/ap-260718-0377.	Population; Outcome
188.	Gallagher, D, Rosenn, B, Toro-Ramos, T, Paley, C, Gidwani, S, Horowitz, M, Crane, J, Lin, S, Thornton, JC, Pi-Sunyer, X, Toro-Ramos, T, Pi-Sunyer, X. Greater Neonatal Fat-Free Mass and Similar Fat Mass Following a Randomized Trial to Control Excess Gestational Weight Gain. Obesity (19307381). 2018. 26:578-587. doi:10.1002/oby.22079.	Intervention/Exposure; Outcome
189.	Garay, SM, Savory, KA, Sumption, L, Penketh, R, Janssen, AB, John, RM. The Grown in Wales Study: Examining dietary patterns, custom birthweight centiles and the risk of delivering a small-for-gestational age (SGA) infant. PLoS One. 2019. 14:e0213412. doi:10.1371/journal.pone.0213412.	Study Design

	Citation	Rationale
190.	Garg, A, Kashyap, S. Effect of counseling on nutritional status during pregnancy. Indian J Pediatr. 2006. 73:687-92.	Country
191.	Gazquez, A, Uhl, O, Ruiz-Palacios, M, Gill, C, Patel, N, Koletzko, B, Poston, L, Larque, E. Placental lipid droplet composition: Effect of a lifestyle intervention (UPBEAT) in obese pregnant women. Biochim Biophys Acta Mol Cell Biol Lipids. 2018. 1863:998-1005. doi:10.1016/j.bbalip.2018.04.020.	Intervention/Exposure
192.	Gennaro, S, Fehder, W. Health behaviors in postpartum women. Family & Community Health. 2000. 22:16-26.	Intervention/Exposure; Comparator
193.	George, GC, Hanss-Nuss, H, Milani, TJ, Freeland-Graves, JH. Food choices of low-income women during pregnancy and postpartum. J Am Diet Assoc. 2005. 105:899-907. doi:10.1016/j.jada.2005.03.028.	Outcome
194.	George, GC, Milani, TJ, Hanss-Nuss, H, Freeland-Graves, JH. Compliance with dietary guidelines and relationship to psychosocial factors in low-income women in late postpartum. J Am Diet Assoc. 2005. 105:916-26. doi:10.1016/j.jada.2005.03.009.	Outcome
195.	Geraghty, AA, O'Brien, EC, Alberdi, G, Horan, MK, Donnelly, J, Larkin, E, Segurado, R, Mehegan, J, Molloy, EJ, McAuliffe, FM. Maternal protein intake during pregnancy is associated with child growth up to 5 years of age, but not through insulin-like growth factor-1: findings from the ROLO study. Br J Nutr. 2018. 120:1252-1261. doi:10.1017/s0007114518002611.	Intervention/Exposure; Comparator
196.	Gesteiro, E, Bastida, S, Sanchez Muniz, FJ. Effects of maternal glucose tolerance, pregnancy diet quality and neonatal insulinemia upon insulin resistance/sensitivity biomarkers in normoweight neonates. Nutr Hosp. 2011. 26:1447-55. doi:10.1590/s0212-16112011000600036.	Outcome
197.	Ghani, RA, Shyam, S, Arshad, F, Wahab, NA, Chinna, K, Safii, NS, Nisak, MY, Kamaruddin, NA. The influence of fasting insulin level in post-gestational diabetes mellitus women receiving low-glycaemic-index diets. Nutr Diabetes. 2014. 4:e107. doi:10.1038/nutd.2014.5.	Population; Outcome
198.	Gicevic, S, Gaskins, AJ, Fung, TT, Rosner, B, Tobias, DK, Isanaka, S, Willett, WC. Evaluating pre-pregnancy dietary diversity vs. dietary quality scores as predictors of gestational diabetes and hypertensive disorders of pregnancy. PLoS ONE. 2018. 13. doi:10.1371/journal.pone.0195103.	Outcome
199.	Giesta, JM, Zoche, E, Correa, RDS, Bosa, VL. Associated factors with early introduction of ultra-processed foods in feeding of children under two years old. Cien Saude Colet. 2019. 24:2387-2397. doi:10.1590/1413-81232018247.24162017.	Study Design

	Citation	Rationale
200.	Gignac, F, Romaguera, D, Fernandez-Barres, S, Phillipat, C, Garcia Esteban, R, Lopez-Vicente, M, Vioque, J, Fernandez-Somoano, A, Tardon, A, Iniguez, C, Lopez-Espinosa, MJ, Garcia de la Hera, M, Amiano, P, Ibarluzea, J, Guxens, M, Sunyer, J, Julvez, J. Maternal nut intake in pregnancy and child neuropsychological development up to 8 years old: a population-based cohort study in Spain. Eur J Epidemiol. 2019. 34:661-673. doi:10.1007/s10654-019-00521-6.	Intervention/Exposure
201.	Gingras, V, Paradis, AM, Tchernof, A, Weisnagel, SJ, Robitaille, J. Relationship between the adoption of preventive practices and the metabolic profile of women with prior gestational diabetes mellitus. Appl Physiol Nutr Metab. 2012. 37:1232-8. doi:10.1139/h2012-114.	Population; Outcome
202.	Giroux, I, Inglis, SD, Lander, S, Gerrie, S, Mottola, MF. Dietary intake, weight gain, and birth outcomes of physically active pregnant women: a pilot study. Appl Physiol Nutr Metab. 2006. 31:483-9. doi:10.1139/h06-024.	Intervention/Exposure
203.	Goletzke, J, Buyken, AE, Louie, JC, Moses, RG, Brand-Miller, JC. Dietary micronutrient intake during pregnancy is a function of carbohydrate quality. Am J Clin Nutr. 2015. 102:626-32. doi:10.3945/ajcn.114.104836.	Intervention/Exposure; Outcome
204.	Gonzalez, HF, Malpeli, A, Mansur, JL, De Santiago, S, Etchegoyen, GS. Changes in body composition in lactating adolescent mothers. Arch Latinoam Nutr. 2005. 55:252-6.	Intervention/Exposure
205.	Gonzalez-Clemente, JM, Carro, O, Gallach, I, Vioque, J, Humanes, A, Sauret, C, Abella, M, Gimenez-Perez, G, Mauricio, D. Increased cholesterol intake in women with gestational diabetes mellitus. Diabetes Metab. 2007. 33:25-9. doi:10.1016/j.diabet.2006.07.002.	Intervention/Exposure; Outcome
206.	Gonzalez-Nahm, S, Mendez, M, Robinson, W, Murphy, SK, Hoyo, C, Hogan, V, Rowley, D. Low maternal adherence to a Mediterranean diet is associated with increase in methylation at the MEG3-IG differentially methylated region in female infants. Environ Epigenet. 2017. 3:dvx007. doi:10.1093/eep/dvx007.	Population
207.	Goodarzi-Khoigani, M, Mahmoodabad, SSM, Moghadam, MHB, Nadjarzadeh, A, Mardanian, F, Fallahzadeh, H, Dadkhah-Tirani, A. Prevention of insulin resistance by dietary intervention among pregnant mothers: A randomized controlled trial. International Journal of Preventive Medicine. 2017. 8. doi:10.4103/ijpvm.IJPVM_405_16.	Intervention/Exposure
208.	Goodman, M, Thomson, J, Landry, A. Nutrition Environment Scores of Local Food Retailers and Proximity to Study Participants' Residence in Rural South (P04-157-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz051.P04-157-19.	Abstract
209.	Grandy, M, Snowden, JM, Boone-Heinonen, J, Purnell, JQ, Thornburg, KL, Marshall, NE. Poorer maternal diet quality and increased birth weight(). J Matern Fetal Neonatal Med. 2018. 31:1613-1619. doi:10.1080/14767058.2017.1322949.	Study Design

	Citation	Rationale
210.	Gray-Donald, K, Robinson, E, Collier, A, David, K, Renaud, L, Rodrigues, S. Intervening to reduce weight gain in pregnancy and gestational diabetes mellitus in Cree communities: an evaluation. Cmaj. 2000. 163:1247-51.	Intervention/Exposure
211.	Gresham, E, Collins, CE, Mishra, GD, Byles, JE, Hure, AJ. Diet quality before or during pregnancy and the relationship with pregnancy and birth outcomes: the Australian Longitudinal Study on Women's Health. Public health nutrition. 2016. 19:2975-2983.	Outcome
212.	Guelinckx, I, Devlieger, R, Mullie, P, Vansant, G. Effect of lifestyle intervention on dietary habits, physical activity, and gestational weight gain in obese pregnant women: a randomized controlled trial. Am J Clin Nutr. 2010. 91:373-80. doi:10.3945/ajcn.2009.28166.	Intervention/Exposure; Outcome
213.	Guilloty, NI, Soto, R, Anzalota, L, Rosario, Z, Cordero, JF, Palacios, C. Diet, Pre-pregnancy BMI, and Gestational Weight Gain in Puerto Rican Women. Matern Child Health J. 2015. 19:2453-61. doi:10.1007/s10995-015-1764-4.	Intervention/Exposure
214.	Gunther, J, Hoffmann, J, Kunath, J, Spies, M, Meyer, D, Stecher, L, Rosenfeld, E, Kick, L, Rauh, K, Hauner, H. Effects of a Lifestyle Intervention in Routine Care on Prenatal Dietary Behavior-Findings from the Cluster-Randomized GeliS Trial. J Clin Med. 2019. 8. doi:10.3390/jcm8070960.	Comparator
215.	Gunther, J, Hoffmann, J, Rauh, K, Kunath, J, Rosenfeld, E, Kick, L, Stecher, L, Hauner, H. The effect of lifestyle counselling on dietary behavior of pregnant women - Secondary results of the randomised controlled GeliS trial. Obesity facts. 2019. 12:171-. doi:10.1159/000489691.	Abstract
216.	Gunther, J, Hoffmann, J, Spies, M, Meyer, D, Kunath, J, Stecher, L, Rosenfeld, E, Kick, L, Rauh, K, Hauner, H. Associations between the Prenatal Diet and Neonatal Outcomes-A Secondary Analysis of the Cluster-Randomised GeliS Trial. Nutrients. 2019. 11. doi:10.3390/nu11081889.	Outcome
217.	Gur, EB, Turan, GA, Ince, O, Karadeniz, M, Tatar, S, Kasap, E, Sahin, N, Guclu, S. Effect of Ramadan fasting on metabolic markers, dietary intake and abdominal fat distribution in pregnancy. Hippokratia. 2015. 19:298-303.	Intervention/Exposure
218.	Guzel, AI, Cinar, M, Erkilinc, S, Aksoy, RT, Yumusak, OH, Celik, F, Celik, Y. Association between adverse perinatal outcomes and amino acid levels measured with nutrient questionnaire in adolescent pregnancies. J Chin Med Assoc. 2016. 79:335-9. doi:10.1016/j.jcma.2015.12.008.	Intervention/Exposure; Outcome
219.	Haakstad, LAH, Voldner, N, Bø, K. Pregnancy and advanced maternal age—The associations between regular exercise and maternal and newborn health variables. Acta Obstetricia et Gynecologica Scandinavica. 2019. doi:10.1111/aogs.13738.	Intervention/Exposure

	Citation	Rationale
220.	Hagberg, LA, Brekke, HK, Bertz, F, Winkvist, A. Cost-utility analysis of a randomized controlled weight loss trial among lactating overweight/obese women. BMC Public Health. 2014. 14:38. doi:10.1186/1471-2458-14-38.	Outcome
221.	Haire-Joshu, DL, Schwarz, CD, Peskoe, SB, Budd, EL, Brownson, RC, Joshu, CE. A group randomized controlled trial integrating obesity prevention and control for postpartum adolescents in a home visiting program. Int J Behav Nutr Phys Act. 2015. 12:88. doi:10.1186/s12966-015-0247-8.	Intervention/Exposure; Population
222.	Hajianfar, H, Esmaillzadeh, A, Feizi, A, Shahshahan, Z, Azadbakht, L. Major Maternal Dietary Patterns during Early Pregnancy and Their Association with Neonatal Anthropometric Measurement. Biomed Res Int. 2018. 2018:4692193. doi:10.1155/2018/4692193.	Outcome
223.	Hajianfar, H, Esmaillzadeh, A, Feizi, A, Shahshahan, Z, Azadbakht, L. The association between major dietary patterns and pregnancy-related complications. Archives of Iranian Medicine. 2018. 21:443-451.	Outcome
224.	Halldorsson, TI, Meltzer, HM, Thorsdottir, I, Knudsen, V, Olsen, SF. Is high consumption of fatty fish during pregnancy a risk factor for fetal growth retardation? A study of 44,824 Danish pregnant women. Am J Epidemiol. 2007. 166:687-96. doi:10.1093/aje/kwm133.	Outcome
225.	Halldorsson, TI, Thorsdottir, I, Meltzer, HM, Strom, M, Olsen, SF. Dioxin-like activity in plasma among Danish pregnant women: dietary predictors, birth weight and infant development. Environ Res. 2009. 109:22-8. doi:10.1016/j.envres.2008.08.011.	Outcome
226.	Hamad, R, Collin, DF, Baer, RJ, Jelliffe-Pawlowski, LL. Association of Revised WIC Food Package With Perinatal and Birth Outcomes: A Quasi-Experimental Study. JAMA Pediatrics. 2019. 173:845-852. doi:10.1001/jamapediatrics.2019.1706.	Intervention/Exposure
227.	Han, SY, Brewis, AA. Influence of weight concerns on breastfeeding: Evidence from the Norwegian mother and child cohort study. Am J Hum Biol. 2018. 30:23-28. doi:10.1002/ajhb.23086.	Intervention/Exposure; Outcome
228.	Harley, K, Eskenazi, B, Block, G. The association of time in the US and diet during pregnancy in low-income women of Mexican descent. Paediatr Perinat Epidemiol. 2005. 19:125-34. doi:10.1111/j.1365-3016.2005.00640.x.	Comparator; Association btw DP and GWG not analyzed
229.	Harmon, KA, Gerard, L, Jensen, DR, Kealey, EH, Hernandez, TL, Reece, MS, Barbour, LA, Bessesen, DH. Continuous glucose profiles in obese and normal-weight pregnant women on a controlled diet: metabolic determinants of fetal growth. Diabetes Care. 2011. 34:2198-204. doi:10.2337/dc11-0723.	Intervention/Exposure

	Citation	Rationale
230.	Harreiter, J, Simmons, D, Desoye, G, Corcoy, R, Adelantado, JM, Devlieger, R, Galjaard, S, Damm, P, Mathiesen, ER, Jensen, DM, Andersen, LLT, Dunne, F, Lapolla, A, Dalfra, MG, Bertolotto, A, Wender-Ozegowska, E, Zawiejska, A, Mantaj, U, Hill, D, Jelsma, JGM, Snoek, FJ, Leutner, M, Lackinger, C, Worda, C, Bancher-Todesca, D, Scharnagl, H, van Poppel, MNM, Kautzky-Willer, A. Nutritional Lifestyle Intervention in Obese Pregnant Women, Including Lower Carbohydrate Intake, Is Associated With Increased Maternal Free Fatty Acids, 3-beta-Hydroxybutyrate, and Fasting Glucose Concentrations: A Secondary Factorial Analysis of the European Multicenter, Randomized Controlled DALI Lifestyle Intervention Trial. Diabetes Care. 2019. doi:10.2337/dc19-0418.	Intervention/Exposure
231.	Haruna, M, Shiraishi, M, Matsuzaki, M, Yatsuki, Y, Yeo, S. Effect of tailored dietary guidance for pregnant women on nutritional status: A double-cohort study. Matern Child Nutr. 2017. 13. doi:10.1111/mcn.12391.	Intervention/Exposure
232.	Hassiotou, F, Geddes, DT. Programming of appetite control during breastfeeding as a preventative strategy against the obesity epidemic. J Hum Lact. 2014. 30:136-42. doi:10.1177/0890334414526950.	Outcome
233.	Hauner, H, Much, D, Vollhardt, C, Brunner, S, Schmid, D, Sedlmeier, EM, Heimberg, E, Schuster, T, Zimmermann, A, Schneider, KT, Bader, BL, Amann-Gassner, U. Effect of reducing the n-6:n-3 long-chain PUFA ratio during pregnancy and lactation on infant adipose tissue growth within the first year of life: an open-label randomized controlled trial. Am J Clin Nutr. 2012. 95:383-94. doi:10.3945/ajcn.111.022590.	Intervention/Exposure
234.	Hauner, H, Vollhardt, C, Schneider, KT, Zimmermann, A, Schuster, T, Amann-Gassner, U. The impact of nutritional fatty acids during pregnancy and lactation on early human adipose tissue development. Rationale and design of the INFAT study. Ann Nutr Metab. 2009. 54:97-103. doi:10.1159/000209267.	Outcome; No Results
235.	Hawkins, M, Hosker, M, Marcus, BH, Rosal, MC, Braun, B, Stanek, EJ, 3rd, Markenson, G, Chasan-Taber, L. A pregnancy lifestyle intervention to prevent gestational diabetes risk factors in overweight Hispanic women: a feasibility randomized controlled trial. Diabet Med. 2015. 32:108-15. doi:10.1111/dme.12601.	Intervention/Exposure
236.	Heery, E, Kelleher, CC, Wall, PG, McAuliffe, FM. Prediction of gestational weight gain - a biopsychosocial model. Public Health Nutr. 2015. 18:1488-98. doi:10.1017/s1368980014001815.	Intervention/Exposure
237.	Heery, E, Wall, PG, Kelleher, CC, McAuliffe, FM. Effects of dietary restraint and weight gain attitudes on gestational weight gain. Appetite. 2016. 107:501-510. doi:10.1016/j.appet.2016.08.103.	Intervention/Exposure

	Citation	Rationale
238.	Hernandez, TL, Van Pelt, RE, Anderson, MA, Reece, MS, Reynolds, RM, de la Houssaye, BA, Heerwagen, M, Donahoo, WT, Daniels, LJ, Chartier-Logan, C, Janssen, RC, Friedman, JE, Barbour, LA. Women With Gestational Diabetes Mellitus Randomized to a Higher-Complex Carbohydrate/Low-Fat Diet Manifest Lower Adipose Tissue Insulin Resistance, Inflammation, Glucose, and Free Fatty Acids: A Pilot Study. Diabetes Care. 2016. 39:39-42. doi:10.2337/dc15-0515.	Health Status
239.	Herrick, K, Phillips, DI, Haselden, S, Shiell, AW, Campbell-Brown, M, Godfrey, KM. Maternal consumption of a high-meat, low-carbohydrate diet in late pregnancy: relation to adult cortisol concentrations in the offspring. J Clin Endocrinol Metab. 2003. 88:3554-60. doi:10.1210/jc.2003-030287.	Intervention/Exposure; Outcome
240.	Hill, AJ, Cairnduff, V, McCance, DR. Nutritional and clinical associations of food cravings in pregnancy. J Hum Nutr Diet. 2016. 29:281-9. doi:10.1111/jhn.12333.	Intervention/Exposure; Outcome
241.	Hill, AJ, McCance, DR. Anthropometric and nutritional associations of food cravings in pregnancy. Pregnancy Hypertens. 2014. 4:235. doi:10.1016/j.preghy.2014.03.018.	Study Design
242.	Hinkle, S, Li, M, Grewal, J, Yisahak, S, Grantz, K, Ajjarapu, A, Zhang, C. Beverage Intake in U.S. Women Across Pregnancy and Gestational Diabetes Risk (P11-010-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.P11-010-19.	Abstract
243.	Hinkle, SN, Rawal, S, Bjerregaard, AA, Halldorsson, TI, Li, M, Ley, SH, Wu, J, Zhu, Y, Chen, L, Liu, A, Grunnet, LG, Rahman, ML, Kampmann, FB, Mills, JL, Olsen, SF, Zhang, C. A prospective study of artificially sweetened beverage intake and cardiometabolic health among women at high risk. Am J Clin Nutr. 2019. doi:10.1093/ajcn/nqz094.	Intervention/Exposure
244.	Hinton, PS, Olson, CM. Postpartum exercise and food intake: the importance of behavior-specific self-efficacy. J Am Diet Assoc. 2001. 101:1430-7. doi:10.1016/s0002-8223(01)00345-5.	Intervention/Exposure
245.	Horan, M, Donnelly, J, McGowan, C, Gibney, E, McAuliffe, F. The association between maternal nutrition and lifestyle during pregnancy and 2-year-old offspring adiposity: analysis from the ROLO study. Journal of Public Health (09431853). 2016. 24:427-436. doi:10.1007/s10389-016-0740-9.	Intervention/Exposure; Population
246.	Horan, MK, McGowan, CA, Gibney, ER, Donnelly, JM, McAuliffe, FM. Maternal low glycaemic index diet, fat intake and postprandial glucose influences neonatal adiposity--secondary analysis from the ROLO study. Nutr J. 2014. 13:78. doi:10.1186/1475-2891-13-78.	Intervention/Exposure; Comparator
247.	Horan, MK, McGowan, CA, Gibney, ER, Donnelly, JM, McAuliffe, FM. Maternal diet and weight at 3 months postpartum following a pregnancy intervention with a low glycaemic index diet: results from the ROLO randomised control trial. Nutrients. 2014. 6:2946-55. doi:10.3390/nu6072946.	Intervention/Exposure

	Citation	Rationale
248.	Hronek, M, Doubkova, P, Hrnciarikova, D, Zadak, Z. Dietary intake of energy and nutrients in relation to resting energy expenditure and anthropometric parameters of Czech pregnant women. Eur J Nutr. 2013. 52:117-25. doi:10.1007/s00394-011-0293-1.	Intervention/Exposure; Comparator
249.	Hronek, M, Doubkova, P, Tosner, J, Zadak, Z. Prediction of nutritive intake energy and substrates of Czech pregnant women. Nutrition. 2011. 27:1118-24. doi:10.1016/j.nut.2010.12.008.	Intervention/Exposure
250.	Hsu, WY, Wu, CH, Hsieh, CT, Lo, HC, Lin, JS, Kao, MD. Low body weight gain, low white blood cell count and high serum ferritin as markers of poor nutrition and increased risk for preterm delivery. Asia Pac J Clin Nutr. 2013. 22:90-9. doi:10.6133/apjcn.2013.22.1.05.	Intervention/Exposure
251.	Hu, G, Tian, H, Zhang, F, Liu, H, Zhang, C, Zhang, S, Wang, L, Liu, G, Yu, Z, Yang, X, Qi, L, Zhang, C, Wang, H, Li, M, Leng, J, Li, Y, Dong, L, Tuomilehto, J. Tianjin Gestational Diabetes Mellitus Prevention Program: study design, methods, and 1-year interim report on the feasibility of lifestyle intervention program. Diabetes Res Clin Pract. 2012. 98:508-17. doi:10.1016/j.diabres.2012.09.015.	Intervention/Exposure
252.	Huang, RC, Silva, D, Beilin, L, Neppe, C, Mackie, KE, Roffey, E, Gibson, LY, D'Vaz, N, Christian, H, Reid, CM, Prescott, SL. Feasibility of conducting an early pregnancy diet and lifestyle e-health intervention: the Pregnancy Lifestyle Activity Nutrition (PLAN) project. J Dev Orig Health Dis. 2019. :1-13. doi:10.1017/s2040174419000400.	Comparator; Exercise co-intervention
253.	Huang, Z, Li, N, Hu, YM. Dietary patterns and their effects on postpartum weight retention of lactating women in south central China. Nutrition. 2019. 67-68:110555. doi:10.1016/j.nut.2019.110555.	Study Design
254.	Huddy, RL, Torres, SJ, Milte, CM, McNaughton, SA, Teychenne, M, Campbell, KJ. Higher Adherence to the Australian Dietary Guidelines Is Associated with Better Mental Health Status among Australian Adult First-Time Mothers. J Acad Nutr Diet. 2016. 116:1406-1412. doi:10.1016/j.jand.2016.01.010.	Study Design; Outcome
255.	Huh, SY, Rifas-Shiman, SL, Kleinman, KP, Rich-Edwards, JW, Lipshultz, SE, Gillman, MW. Maternal protein intake is not associated with infant blood pressure. Int J Epidemiol. 2005. 34:378-84. doi:10.1093/ije/dyh373.	Intervention/Exposure; Outcome
256.	Hui, A, Back, L, Ludwig, S, Gardiner, P, Sevenhuysen, G, Dean, H, Sellers, E, McGavock, J, Morris, M, Bruce, S, Murray, R, Shen, GX. Lifestyle intervention on diet and exercise reduced excessive gestational weight gain in pregnant women under a randomised controlled trial. Bjog. 2012. 119:70-7. doi:10.1111/j.1471-0528.2011.03184.x.	Intervention/Exposure; Comparator
257.	Hui, A, Back, L, Ludwig, S, Gardiner, P, Sevenhuysen, G, Dean, H, Sellers, E, McGavock, J, Morris, M, Bruce, S, etal, . Exercise and dietary intervention increases physical activity, promotes healthy diet and reduces excessive gestational weight gain in pregnant women: a randomized controlled trial in Urban community. Diabetes. 2011. 60:A351-. doi:10.2337/db11-868-1281.	Abstract

	Citation	Rationale
258.	Hui, A, Back, L, Ludwig, S, Gardiner, P, Sevenhuysen, G, Dean, H, Sellers, E, McGavock, J, Morris, M, Bruce, S, etal, . Lifestyle intervention on diet and exercise reduced excessive gestational weight gain in pregnant women under a randomized controlled trial. Obstetrical & gynecological survey. 2012. 67:263-264. doi:10.1097/OGX.0b013e3182561861.	Editorial comment
259.	Hui, AL, Back, L, Ludwig, S, Gardiner, P, Sevenhuysen, G, Dean, HJ, Sellers, E, McGavock, J, Morris, M, Jiang, D, Shen, GX. Effects of lifestyle intervention on dietary intake, physical activity level, and gestational weight gain in pregnant women with different pre-pregnancy Body Mass Index in a randomized control trial. BMC Pregnancy Childbirth. 2014. 14:331. doi:10.1186/1471-2393-14-331.	Intervention/Exposure; Exercise co-intervention
260.	Hui, AL, Back, L, Reid, A, Sevenhuysen, G, Ludwig, S, Dean, H, Sellers, E, McGavock, J, Morris, M, Shen, G. Effects of physical activity and dietary intakes on weight gain of pregnant women with normal and above normal prepregnancy weight. Canadian journal of diabetes. 2012. 36:S8-.	Abstract
261.	Huseinovic, E, Bertz, F, Brekke, HK, Winkvist, A. Two-year follow-up of a postpartum weight loss intervention: Results from a randomized controlled trial. Maternal and Child Nutrition. 2018. 14. doi:10.1111/mcn.12539.	Intervention/Exposure; Population
262.	Huseinovic, E, Bertz, F, Leu Agelii, M, Hellebo Johansson, E, Winkvist, A, Brekke, HK. Effectiveness of a weight loss intervention in postpartum women: results from a randomized controlled trial in primary health care. Am J Clin Nutr. 2016. 104:362-70. doi:10.3945/ajcn.116.135673.	Intervention/Exposure
263.	Huseinovic, E, Ohlin, M, Winkvist, A, Bertz, F, Sonesson, U, Brekke, HK. Does diet intervention in line with nutrition recommendations affect dietary carbon footprint? Results from a weight loss trial among lactating women. Eur J Clin Nutr. 2017. 71:1241-1245. doi:10.1038/ejcn.2017.63.	Intervention/Exposure; Population
264.	Huseinovic, E, Winkvist, A, Bertz, F, Berteus Forslund, H, Brekke, HK. Eating frequency, energy intake and body weight during a successful weight loss trial in overweight and obese postpartum women. Eur J Clin Nutr. 2014. 68:71-6. doi:10.1038/ejcn.2013.200.	Intervention/Exposure
265.	Huseinovic, E, Winkvist, A, Bertz, F, Brekke, HK. Changes in food choice during a successful weight loss trial in overweight and obese postpartum women. Obesity (Silver Spring). 2014. 22:2517-23. doi:10.1002/oby.20895.	Outcome
266.	Huseinovic, E, Winkvist, A, Bertz, F, Hellebo Johansson, E, Brekke, HK. Dietary assessment among women with overweight and obesity in early postpartum. J Hum Nutr Diet. 2016. 29:411-7. doi:10.1111/jhn.12350.	Study Design; Outcome
267.	Hutchison, SM, Masse, LC, Glier, MB, Brain, U, Devlin, AM, Oberlander, TF. Impact of Prenatal Selective Serotonin Reuptake Inhibitor Antidepressant Exposure and Maternal Mood on Physical Activity, Dietary Intake, and Markers of Adiposity at Age 6 Years. J Dev Behav Pediatr. 2019. 40:266-274. doi:10.1097/dbp.0000000000000658.	Intervention/Exposure

	Citation	Rationale
268.	Huvinen, E, Koivusalo, SB, Meinila, J, Valkama, A, Tiitinen, A, Rono, K, Stach-Lempinen, B, Eriksson, JG. Effects of a Lifestyle Intervention During Pregnancy and First Postpartum Year: Findings From the RADIEL Study. J Clin Endocrinol Metab. 2018. 103:1669-1677. doi:10.1210/jc.2017-02477.	Outcome; Comparator
269.	Ilmonen, J, Isolauri, E, Poussa, T, Laitinen, K. Impact of dietary counselling and probiotic intervention on maternal anthropometric measurements during and after pregnancy: a randomized placebo-controlled trial. Clin Nutr. 2011. 30:156-64. doi:10.1016/j.clnu.2010.09.009.	Population; Outcome
270.	Jaakkola, J, Hakala, P, Isolauri, E, Poussa, T, Laitinen, K. Eating behavior influences diet, weight, and central obesity in women after pregnancy. Nutrition. 2013. 29:1209-13. doi:10.1016/j.nut.2013.03.008.	Intervention/Exposure; Outcome
271.	Jaakkola, J, Isolauri, E, Poussa, T, Laitinen, K. Benefits of repeated individual dietary counselling in long-term weight control in women after delivery. Matern Child Nutr. 2015. 11:1041-8. doi:10.1111/mcn.12115.	Intervention/Exposure; Population
272.	Jackson, RA, Stotland, NE, Caughey, AB, Gerbert, B. Improving diet and exercise in pregnancy with Video Doctor counseling: a randomized trial. Patient Educ Couns. 2011. 83:203-9. doi:10.1016/j.pec.2010.05.019.	Intervention/Exposure; Comparator
273.	Janmohamed, R, Montgomery-Fajic, E, Sia, W, Germaine, D, Wilkie, J, Khurana, R, Nerenberg, KA. Cardiovascular risk reduction and weight management at a hospital-based postpartum preeclampsia clinic. J Obstet Gynaecol Can. 2015. 37:330-337. doi:10.1016/s1701-2163(15)30283-8.	Intervention/Exposure
274.	Jansson, N, Nilsfelt, A, Gellerstedt, M, Wennergren, M, Rossander-Hulthen, L, Powell, TL, Jansson, T. Maternal hormones linking maternal body mass index and dietary intake to birth weight. Am J Clin Nutr. 2008. 87:1743-9. doi:10.1093/ajcn/87.6.1743.	Outcome; Comparator
275.	Jardí, C, Aparicio, E, Bedmar, C, Aranda, N, Abajo, S, March, G, Basora, J, Arija, V. Food consumption during pregnancy and post-partum. ECLIPSES study. Nutrients. 2019. 11. doi:10.3390/nu11102447.	Outcome
276.	Jaruratanasirikul, S, Sangsupawanich, P, Koranantakul, O, Chanvitan, P, Sriplung, H, Patanasin, T. Influence of maternal nutrient intake and weight gain on neonatal birth weight: a prospective cohort study in southern Thailand. J Matern Fetal Neonatal Med. 2009. 22:1045-50. doi:10.3109/14767050903019668.	Intervention/Exposure; Outcome
277.	Jedrychowski, W, Perera, FP, Tang, D, Stigter, L, Mroz, E, Flak, E, Spengler, J, Budzyn-Mrozek, D, Kaim, I, Jacek, R. Impact of barbecued meat consumed in pregnancy on birth outcomes accounting for personal prenatal exposure to airborne polycyclic aromatic hydrocarbons: Birth cohort study in Poland. Nutrition. 2012. 28:372-7. doi:10.1016/j.nut.2011.07.020.	Intervention/Exposure; Outcome

	Citation	Rationale
278.	Jiang, F, Li, Y, Xu, P, Li, J, Chen, X, Yu, H, Gao, B, Xu, B, Li, X, Chen, W. The efficacy of the Dietary Approaches to Stop Hypertension diet with respect to improving pregnancy outcomes in women with hypertensive disorders. J Hum Nutr Diet. 2019. doi:10.1111/jhn.12654.	Outcome
279.	Jing, W, Huang, Y, Liu, X, Luo, B, Yang, Y, Liao, S. The effect of a personalized intervention on weight gain and physical activity among pregnant women in China. Int J Gynaecol Obstet. 2015. 129:138-41. doi:10.1016/j.ijgo.2014.11.014.	Comparator; Exercise co-intervention
280.	Juhl, M, Madsen, M, Andersen, AMN, Andersen, PK, Olsen, J. Distribution and predictors of exercise habits among pregnant women in the Danish National Birth Cohort. Scandinavian Journal of Medicine & Science in Sports. 2012. 22:128-138. doi:10.1111/j.1600-0838.2010.01125.x.	Outcome
281.	Jung, YM, Choi, MJ. Nutrient Intake according to Weight Gain during Pregnancy, Job Status, and Household Income. Clin Nutr Res. 2017. 6:27-37. doi:10.7762/cnr.2017.6.1.27.	Study Design; Intervention/Exposure
282.	Kac, G, Benicio, MH, Velasquez-Melendez, G, Valente, JG, Struchiner, CJ. Breastfeeding and postpartum weight retention in a cohort of Brazilian women. Am J Clin Nutr. 2004. 79:487-93. doi:10.1093/ajcn/79.3.487.	Intervention/Exposure
283.	Karamanos, B, Thanopoulou, A, Anastasiou, E, Assaad-Khalil, S, Albache, N, Bachaoui, M, Slama, CB, El Ghomari, H, Jotic, A, Lalic, N, Lapolla, A, Saab, C, Marre, M, Vassallo, J, Savona-Ventura, C. Relation of the Mediterranean diet with the incidence of gestational diabetes. Eur J Clin Nutr. 2014. 68:8-13. doi:10.1038/ejcn.2013.177.	Comparator; Country
284.	Karayiannis, D, Kontogianni, MD, Mendorou, C, Mastrominas, M, Yiannakouris, N. Adherence to the Mediterranean diet and IVF success rate among non-obese women attempting fertility. Hum Reprod. 2018. 33:494-502. doi:10.1093/humrep/dey003.	Population; Outcome
285.	Kay, MC, Wasser, H, Adair, LS, Thompson, AL, Siega-Riz, AM, Suchindran, CM, Bentley, ME. Consumption of key food groups during the postpartum period in low-income, non-Hispanic black mothers. Appetite. 2017. 117:161-167. doi:10.1016/j.appet.2017.06.023.	Intervention/Exposure; Outcome
286.	Keller, C, Todd, M, Ainsworth, B, Records, K, Vega-Lopez, S, Permana, P, Coonrod, D, Williams, AN. Overweight, Obesity, and Neighborhood Characteristics among Postpartum Latinas. Journal of Obesity. 2013. 2013:1-8. doi:2013/916468.	Intervention/Exposure; Outcome
287.	Kennedy, RAK, Turner, MJ. Development of a novel Periconceptual Nutrition Score (PENS) to examine the relationship between maternal dietary quality and fetal growth. Early Human Development. 2019. 132:6-12. doi:10.1016/j.earlhumdev.2019.03.004.	Outcome
288.	Khoury, J, Henriksen, T, Christophersen, B, Tonstad, S. Effect of a cholesterol-lowering diet on maternal, cord, and neonatal lipids, and pregnancy outcome: a randomized clinical trial. American journal of obstetrics and gynecology. 2005. 193:1292-1301. doi:10.1016/j.ajog.2005.05.016.	Intervention/Exposure

	Citation	Rationale
289.	Kim, JH, Lee, SJ, Kim, SY, Choi, G, Lee, JJ, Kim, HJ, Kim, S, Park, J, Moon, HB, Choi, K, Kim, S, Choi, SR. Association of food consumption during pregnancy with mercury and lead levels in cord blood. Sci Total Environ. 2016. 563-564:118-24. doi:10.1016/j.scitotenv.2016.04.082.	Intervention/Exposure; Outcome
290.	Kim, MJ, Kim, TH, Park, Y, Lee, HH, Kim, JM, Lim, H, Hwang, SY. A study of the dietary intakes by the pre-pregnancy body mass index in pregnant women. Clin Exp Obstet Gynecol. 2017. 44:27-29.	Outcome; Comparator
291.	Kim, O, Ahn, Y, Lee, HY, Jang, HJ, Kim, S, Lee, JE, Jung, H, Cho, E, Lim, JY, Kim, MJ, Willett, WC, Chavarro, JE, Park, HY. The Korea Nurses' Health Study: A Prospective Cohort Study. J Womens Health (Larchmt). 2017. 26:892-899. doi:10.1089/jwh.2016.6048.	Intervention/Exposure; Population
292.	Kim, SH, Kim, MY, Yang, JH, Park, SY, Yim, CH, Han, KO, Yoon, HK, Park, S. Nutritional risk factors of early development of postpartum prediabetes and diabetes in women with gestational diabetes mellitus. Nutrition. 2011. 27:782-8. doi:10.1016/j.nut.2010.08.019.	Intervention/Exposure
293.	Kinnunen, T, Puhkala, J, Raitanen, J, Ahonen, S, Aittasalo, M, Virtanen, SM, Luoto, R. Effects of dietary counselling on food habits and dietary intake of Finnish pregnant women at increased risk for gestational diabetes - a secondary analysis of a cluster-randomized controlled trial. Maternal & Child Nutrition. 2014. 10:184-197. doi:10.1111/j.1740-8709.2012.00426.x.	Outcome
294.	Kinnunen, TI, Pasanen, M, Aittasalo, M, Fogelholm, M, Weiderpass, E, Luoto, R. Reducing postpartum weight retention--a pilot trial in primary health care. Nutr J. 2007. 6:21. doi:10.1186/1475-2891-6-21.	Intervention/Exposure
295.	Kiyak Caglayan, E, Engin-Ustun, Y, Sari, N, Gocmen, AY, Polat, MF. The effects of prolonged fasting on the levels of adiponectin, leptin, apelin, and omentin in pregnant women. J Obstet Gynaecol. 2016. 36:555-8. doi:10.3109/01443615.2015.1103716.	Intervention/Exposure
296.	Kiziltan, G, Karabudak, E, Tuncay, G, Avsar, F, Tuncay, P, Mungan, O, Meral, P. Dietary intake and nutritional status of Turkish pregnant women during Ramadan. Saudi Med J. 2005. 26:1782-7.	Country
297.	Kizirian, N, Garnett, S, Markovic, T, Ross, G, Muirhead, R, Brodie, S, Petocz, P, Brand-Miller, J. Maternal diet and infant body composition in women at risk of gestational diabetes mellitus. Obesity research & clinical practice. 2014. 8:55-. doi:10.1016/j.orcp.2014.10.102.	Abstract
298.	Kizirian, NV, Markovic, TP, Muirhead, R, Brodie, S, Garnett, SP, Louie, JC, Petocz, P, Ross, GP, Brand-Miller, JC. Macronutrient Balance and Dietary Glycemic Index in Pregnancy Predict Neonatal Body Composition. Nutrients. 2016. 8. doi:10.3390/nu8050270.	Intervention/Exposure; Outcome

	Citation	Rationale
299.	Knudsen, VK, Heitmann, BL, Halldorsson, TI, Sorensen, TI, Olsen, SF. Maternal dietary glycaemic load during pregnancy and gestational weight gain, birth weight and postpartum weight retention: a study within the Danish National Birth Cohort. Br J Nutr. 2013. 109:1471-8. doi:10.1017/s0007114512003443.	Population
300.	Kombol, P. ILCA's Inside Track: a resource for breastfeeding mothers. Breastfeeding after weight loss surgery. J Hum Lact. 2008. 24:341-2. doi:10.1177/08903344080240031801.	Study Design
301.	Kominiarek, MA. A Survey of Health Behaviors in Minority Women in Pregnancy: The Influence of Body Mass Index. Women's Health Issues. 2014. 24:e291-5. doi:10.1016/j.whi.2014.02.007.	Study Design; Intervention/Exposure
302.	Kong, A, Odoms-Young, AM, Schiffer, LA, Berbaum, ML, Porter, SJ, Blumstein, L, Fitzgibbon, ML. Racial/Ethnic Differences in Dietary Intake among WIC Families Prior to Food Package Revisions. Journal of Nutrition Education & Behavior. 2013. 45:39-46. doi:10.1016/j.jneb.2012.04.014.	Study Design; Outcome
303.	Korpi-Hyovalti, E, Schwab, U, Laaksonen, DE, Linjama, H, Heinonen, S, Niskanen, L. Effect of intensive counselling on the quality of dietary fats in pregnant women at high risk of gestational diabetes mellitus. Br J Nutr. 2012. 108:910-7. doi:10.1017/s0007114511006118.	Intervention/Exposure
304.	Koutelidakis, AE, Alexatou, O, Kousaiti, S, Gkretsi, E, Vasios, G, Sampani, A, Tolia, M, Kiortsis, DN, Giaginis, C. Higher adherence to Mediterranean diet prior to pregnancy is associated with decreased risk for deviation from the maternal recommended gestational weight gain. Int J Food Sci Nutr. 2018. 69:84-92. doi:10.1080/09637486.2017.1330403.	Study Design
305.	Krawczyk, P, Sioma-Markowska, U, Nowak-Brzezińska, A, Skrzypulec-Plinta, V, Kubiak, E. Relationship of eating habits of pregnant women and daily delivery of nutrients as well as their influence on the course of pregnancy and condition of the neonate. Ginekologia i Poloznictwo. 2016. 42:33-42.	Outcome
306.	Kubota, K, Itoh, H, Tasaka, M, Naito, H, Fukuoka, Y, Muramatsu Kato, K, Kohmura, YK, Sugihara, K, Kanayama, N. Changes of maternal dietary intake, bodyweight and fetal growth throughout pregnancy in pregnant Japanese women. J Obstet Gynaecol Res. 2013. 39:1383-90. doi:10.1111/jog.12070.	Intervention/Exposure
307.	Kunath, J, Günther, J, Rauh, K, Hoffmann, J, Stecher, L, Rosenfeld, E, Kick, L, Ulm, K, Hauner, H. Effects of a lifestyle intervention during pregnancy to prevent excessive gestational weight gain in routine care - the cluster-randomised GeliS trial. BMC Medicine. 2019. 17. doi:10.1186/s12916-018-1235-z.	Intervention/Exposure
308.	Lagiou, P, Lagiou, A, Samoli, E, Hsieh, CC, Adami, HO, Trichopoulos, D. Diet during pregnancy and levels of maternal pregnancy hormones in relation to the risk of breast cancer in the offspring. Eur J Cancer Prev. 2006. 15:20-6.	Outcome; Comparator

	Citation	Rationale
309.	Lagiou, P, Samoli, E, Lipworth, L, Lagiou, A, Fang, F, Rossi, M, Xu, B, Yu, GP, Adami, HO, Hsieh, CC, Trichopoulos, D. Energy intake during pregnancy in relation to offspring gender by maternal height. Eur J Epidemiol. 2011. 26:39-44. doi:10.1007/s10654-010-9528-3.	Study Design; Intervention/Exposure
310.	Lagiou, P, Tamimi, RM, Mucci, LA, Adami, HO, Hsieh, CC, Trichopoulos, D. Diet during pregnancy in relation to maternal weight gain and birth size. Eur J Clin Nutr. 2004. 58:231-7. doi:10.1038/sj.ejcn.1601771.	Intervention/Exposure; Comparator
311.	Lai, JS, Soh, SE, Loy, SL, Colega, M, Kramer, MS, Chan, JKY, Tan, TC, Shek, LPC, Yap, FKP, Tan, KH, Godfrey, KM, Chong, YS, Chong, MFF. Macronutrient composition and food groups associated with gestational weight gain: the GUSTO study. Eur J Nutr. 2019. 58:1081-1094. doi:10.1007/s00394-018-1623-3.	Intervention/Exposure
312.	Lamichhane, DK, Leem, JH, Kim, HC, Lee, JY, Park, MS, Jung, DY, Ko, JK, Ha, M, Kim, Y, Hong, YC, Ha, EH. Impact of prenatal exposure to polycyclic aromatic hydrocarbons from maternal diet on birth outcomes: a birth cohort study in Korea. Public Health Nutr. 2016. 19:2562-71. doi:10.1017/s1368980016000550.	Intervention/Exposure
313.	Lamyian, M, Hosseinpour-Niazi, S, Mirmiran, P, Moghaddam Banaem, L, Goshtasebi, A, Azizi, F. Pre-Pregnancy Fast Food Consumption Is Associated with Gestational Diabetes Mellitus among Tehranian Women. Nutrients. 2017. 9. doi:10.3390/nu9030216.	Intervention/Exposure
314.	Laraia, B, Vinikoor-Imler, LC, Siega-Riz, AM. Food insecurity during pregnancy leads to stress, disordered eating, and greater postpartum weight among overweight women. Obesity. 2015. 23:1303-11. doi:10.1002/oby.21075.	Intervention/Exposure
315.	Laraia, BA, Adler, NE, Coleman-Phox, K, Vieten, C, Mellin, L, Kristeller, JL, Thomas, M, Stotland, NE, Lustig, RH, Dallman, MF, Hecht, FM, Bush, NR, de Groat, CL, Epel, E. Novel Interventions to Reduce Stress and Overeating in Overweight Pregnant Women: A Feasibility Study. Matern Child Health J. 2018. 22:670-678. doi:10.1007/s10995-018-2435-z.	Intervention/Exposure
316.	Laraia, BA, Bodnar, LM, Siega-Riz, AM. Pregravid body mass index is negatively associated with diet quality during pregnancy. Public Health Nutr. 2007. 10:920-6. doi:10.1017/s1368980007657991.	Outcome
317.	Laraia, BA, Siega-Riz, AM, Dole, N, London, E. Pregravid weight is associated with prior dietary restraint and psychosocial factors during pregnancy. Obesity (Silver Spring). 2009. 17:550-8. doi:10.1038/oby.2008.585.	Intervention/Exposure; Outcome
318.	Larranaga, I, Santa-Marina, L, Begiristain, H, Machon, M, Vrijheid, M, Casas, M, Tardon, A, Fernandez-Somoano, A, Llop, S, Rodriguez-Bernal, CL, Fernandez, MF. Socio-economic inequalities in health, habits and self-care during pregnancy in Spain. Matern Child Health J. 2013. 17:1315-24. doi:10.1007/s10995-012-1134-4.	Intervention/Exposure; Outcome

	Citation	Rationale
319.	Larsen, SC, Angquist, L, Laurin, C, Morgen, CS, Jakobsen, MU, Paternoster, L, Smith, GD, Olsen, SF, Sorensen, TI, Nohr, EA. Association between Maternal Fish Consumption and Gestational Weight Gain: Influence of Molecular Genetic Predisposition to Obesity. PLoS One. 2016. 11:e0150105. doi:10.1371/journal.pone.0150105.	Intervention/Exposure
320.	Latva-Pukkila, U, Isolauri, E, Laitinen, K. Dietary and clinical impacts of nausea and vomiting during pregnancy. J Hum Nutr Diet. 2010. 23:69-77. doi:10.1111/j.1365-277X.2009.01019.x.	Intervention/Exposure; Comparator
321.	Lavie, M, Lavie, I, Maslovitz, S. Paleolithic diet during pregnancy-A potential beneficial effect on metabolic indices and birth weight. Eur J Obstet Gynecol Reprod Biol. 2019. 242:7-11. doi:10.1016/j.ejogrb.2019.08.013.	Study Design
322.	Leahy, K, Berlin, KS, Banks, GG, Bachman, J. The Relationship Between Intuitive Eating and Postpartum Weight Loss. Matern Child Health J. 2017. 21:1591-1597. doi:10.1007/s10995-017-2281-4.	Study Design; Intervention/Exposure
323.	Ledoux, T, Robinson, J, Sampson, M, Beasley, A. Effect of Intuitive Eating on Gestational Weight Gain. Journal of the Academy of Nutrition & Dietetics. 2016. 116:A16-A16. doi:10.1016/j.jand.2016.06.041.	Conference abstract
324.	Lee, JI, Lee, JA, Lim, HS. Morning sickness reduces dietary diversity, nutrient intakes, and infant outcome of pregnant women. Nutrition Research. 2004. 24:531-540. doi:10.1016/j.nutres.2003.10.011.	Intervention/Exposure
325.	Leslie, DA, Hesketh, KD, Campbell, KJ. Breastfeeding mothers consume more vegetables and a greater variety of fruits and vegetables than non-breastfeeding peers: The influence of socioeconomic position. Nutrition & Dietetics. 2012. 69:84-90. doi:10.1111/j.1747-0080.2012.01584.x.	Study Design; Outcome
326.	Lesser, MNR, Mauldin, K, Sawrey-Kubicek, L, Gildengorin, V, King, JC. The Type of Dietary Fat in an Isocaloric Breakfast Meal Does Not Modify Postprandial Metabolism in Overweight/Obese Pregnant Women. Nutrients. 2019. 11. doi:10.3390/nu11030490.	Intervention/Exposure; Outcome
327.	Li, S, Zhu, Y, Chavarro, JE, Bao, W, Tobias, DK, Ley, SH, Forman, JP, Liu, A, Mills, J, Bowers, K, Strom, M, Hansen, S, Hu, FB, Zhang, C. Healthful Dietary Patterns and the Risk of Hypertension Among Women With a History of Gestational Diabetes Mellitus: A Prospective Cohort Study. Hypertension. 2016. 67:1157-65. doi:10.1161/hypertensionaha.115.06747.	Population; Outcome
328.	Li, YM, Shen, YD, Li, YJ, Xun, GL, Liu, H, Wu, RR, Xia, K, Zhao, JP, Ou, JJ. Maternal dietary patterns, supplements intake and autism spectrum disorders: A preliminary case-control study. Medicine (Baltimore). 2018. 97:e13902. doi:10.1097/md.0000000000013902.	Study Design; Outcome

	Citation	Rationale
329.	Lignell, S, Winkvist, A, Bertz, F, Rasmussen, KM, Glynn, A, Aune, M, Brekke, HK. Environmental organic pollutants in human milk before and after weight loss. Chemosphere. 2016. 159:96-102. doi:10.1016/j.chemosphere.2016.05.077.	Intervention/Exposure; Outcome
330.	Lindsay, K, Buss, C, Entringer, S, Wadhwa, P. The Interplay Between Diet Quality and Pre-pregnancy Body Mass Index on Glycemic Parameters in Pregnancy: A Comparison of Various Diet Quality Scores (OR35-02-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.OR35-02-19.	Abstract
331.	Lindsay, KL, Heneghan, C, McNulty, B, Brennan, L, McAuliffe, FM. Lifestyle and dietary habits of an obese pregnant cohort. Matern Child Health J. 2015. 19:25-32. doi:10.1007/s10995-014-1491-2.	Population
332.	Linné, Y, Rössner, S. Interrelationships between weight development and weight retention in subsequent pregnancies: The SPAWN study. Acta Obstetricia et Gynecologica Scandinavica. 2003. 82:318-325. doi:10.1034/j.1600-0412.2003.00150.x.	Intervention/Exposure
333.	Lioret, S, Cameron, AJ, McNaughton, SA, Crawford, D, Spence, AC, Hesketh, K, Campbell, KJ. Association between maternal education and diet of children at 9 months is partially explained by mothers' diet. Matern Child Nutr. 2015. 11:936-47. doi:10.1111/mcn.12031.	Outcome
334.	Lipsmeyer, M, Diaz, E, Sims, C, Cleves, M, Shankar, K, Andres, A. Antenatal and Postnatal Factors Associated with Offspring Adiposity During the First Two Years of Life (FS18-08-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz041.FS18-08-19.	Abstract
335.	Liu, K, Ye, K, Han, Y, Sheng, J, Jin, Z, Bo, Q, Hu, C, Hu, C, Li, L. Maternal and cord blood fatty acid patterns with excessive gestational weight gain and neonatal macrosomia. Asia Pac J Clin Nutr. 2017. 26:291-297. doi:10.6133/apjcn.012016.11.	Study Design; Intervention/Exposure
336.	Liu, MJ, Li, HT, Yu, LX, Xu, GS, Ge, H, Wang, LL, Zhang, YL, Zhou, YB, Li, Y, Bai, MX, Liu, JM. A correlation study of DHA dietary intake and plasma, erythrocyte and breast milk DHA concentrations in lactatingwomen from Coastland, Lakeland, and Inland areas of China. Nutrients. 2016. 8. doi:10.3390/nu8050312.	Intervention/Exposure; Outcome
337.	Lof, M, Hilakivi-Clarke, L, Sandin, SS, de Assis, S, Yu, W, Weiderpass, E. Dietary fat intake and gestational weight gain in relation to estradiol and progesterone plasma levels during pregnancy: a longitudinal study in Swedish women. BMC Womens Health. 2009. 9:10. doi:10.1186/1472-6874-9-10.	Intervention/Exposure; Comparator
338.	Lombard, CB, Deeks, AA, Ball, K, Jolley, D, Teede, HJ. Weight, physical activity and dietary behavior change in young mothers: short term results of the HeLP-her cluster randomized controlled trial. Nutr J. 2009. 8:17. doi:10.1186/1475-2891-8-17.	Population
339.	Long, VA, Martin, T, Janson-Sand, C. The Great Beginnings program: impact of a nutrition curriculum on nutrition knowledge, diet quality, and birth outcomes in pregnant and parenting teens. Journal of the American Dietetic Association. 2002. 102:S86-9.	Intervention/Exposure; Population

	Citation	Rationale
340.	Lopez-Cepero, A, Nobel, L, Moore-Simas, T, Rosal, M. Maternal Diet Quality and Infant Growth Trajectories During the First Year of Life (OR35-07-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.OR35-07-19.	Abstract
341.	Lopez-Olmedo, N, Hernandez-Cordero, S, Neufeld, LM, Garcia-Guerra, A, Mejia-Rodriguez, F, Mendez Gomez-Humaran, I. The Associations of Maternal Weight Change with Breastfeeding, Diet and Physical Activity During the Postpartum Period. Matern Child Health J. 2016. 20:270-80. doi:10.1007/s10995-015-1826-7.	Intervention/Exposure
342.	Lotfi, MH, Fallahzadeh, H, Rahmanian, M, Hosseinzadeh, M, Lashkardoost, H, Doaei, S, Gholamalizadeh, M, Hamedi, A. Association of food groups intake and physical activity with gestational diabetes mellitus in Iranian women. J Matern Fetal Neonatal Med. 2019. :1-6. doi:10.1080/14767058.2019.1579189.	Study Design; Intervention/Exposure
343.	Louie, JC, Markovic, TP, Perera, N, Foote, D, Petocz, P, Ross, GP, Brand-Miller, JC. A randomized controlled trial investigating the effects of a low-glycemic index diet on pregnancy outcomes in gestational diabetes mellitus. Diabetes Care. 2011. 34:2341-6. doi:10.2337/dc11-0985.	Health Status
344.	Louie, JCY, Markovic, TP, Ross, GP, Foote, D, Brand-Miller, JC. Effect of a low glycaemic index diet in gestational diabetes mellitus on post-natal outcomes after 3 months of birth: a pilot follow-up study. Maternal & Child Nutrition. 2015. 11:409-414. doi:10.1111/mcn.12039.	Intervention/Exposure; Population
345.	Lovelady, CA, Stephenson, KG, Kuppler, KM, Williams, JP. The effects of dieting on food and nutrient intake of lactating women. J Am Diet Assoc. 2006. 106:908-12. doi:10.1016/j.jada.2006.03.007.	Intervention/Exposure; Outcome
346.	Lu, MS, Chen, QZ, He, JR, Wei, XL, Lu, JH, Li, SH, Wen, XX, Chan, FF, Chen, NN, Qiu, L, Mai, WB, Zhang, RF, Hu, CY, Xia, HM, Qiu, X. Maternal Dietary Patterns and Fetal Growth: A Large Prospective Cohort Study in China. Nutrients. 2016. 8. doi:10.3390/nu8050257.	Outcome
347.	Lundeen, E, Park, S, Baidal, JAW, Sharma, A, Blanck, HM. Prevalence of and Factors Associated with Sugar-sweetened Beverage Intake Among Women of Reproductive Age-12 States and District of Columbia, 2017 (P16-022-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz050.P16-022-19.	Abstract
348.	Luoto, R, Kharazmi, E, Saarinen, NM, Smeds, AI, Mäkelä, S, Fallah, M, Raitanen, J, Hilakivi-Clarke, L. Effect of dietary intervention on serum lignan levels in pregnant women - a controlled trial. Reproductive Health. 2010. 7:6p-6p. doi:10.1186/1742-4755-7-26.	Intervention/Exposure; Outcome
349.	Luoto, RM, Kinnunen, TI, Aittasalo, M, Ojala, K, Mansikkamaki, K, Toropainen, E, Kolu, P, Vasankari, T. Prevention of gestational diabetes: design of a cluster-randomized controlled trial and one-year follow-up. BMC Pregnancy Childbirth. 2010. 10:39. doi:10.1186/1471-2393-10-39.	Study Design; Intervention/Exposure

	Citation	Rationale
350.	Lyu, LC, Lo, CC, Chen, HF, Wang, CY, Liu, DM. A prospective study of dietary intakes and influential factors from pregnancy to postpartum on maternal weight retention in Taipei, Taiwan. Br J Nutr. 2009. 102:1828-37. doi:10.1017/s0007114509991243.	Intervention/Exposure; Population
351.	Ma, C, Shaw, GM, Scheuerle, AE, Canfield, MA, Carmichael, SL. Association of microtia with maternal nutrition. Birth Defects Res A Clin Mol Teratol. 2012. 94:1026-32. doi:10.1002/bdra.23053.	Outcome
352.	Ma, L, Lu, Q, Ouyang, J, Huang, J, Huang, S, Jiao, C, Zhang, Z, Mao, L. How are maternal dietary patterns and maternal/fetal cytokines associated with birth weight? A path analysis. Br J Nutr. 2019. 121:1178-1187. doi:10.1017/s0007114519000382.	Outcome
353.	Ma, WJ, Huang, ZH, Huang, BX, Qi, BH, Zhang, YJ, Xiao, BX, Li, YH, Chen, L, Zhu, HL. Intensive low-glycaemic-load dietary intervention for the management of glycaemia and serum lipids among women with gestational diabetes: a randomized control trial. Public Health Nutr. 2015. 18:1506-13. doi:10.1017/s1368980014001992.	Intervention/Exposure
354.	Mak, JKL, Pham, NM, Lee, AH, Tang, L, Pan, XF, Binns, CW, Sun, X. Dietary patterns during pregnancy and risk of gestational diabetes: a prospective cohort study in Western China. Nutr J. 2018. 17:107. doi:10.1186/s12937-018-0413-3.	Outcome
355.	Makela, J, Lagstrom, H, Kaljonen, A, Simell, O, Niinikoski, H. Hyperglycemia and lower diet quality in pregnant overweight women and increased infant size at birth and at 13 months of age--STEPS study. Early Hum Dev. 2013. 89:439-44. doi:10.1016/j.earlhumdev.2013.01.007.	Intervention/Exposure
356.	Malek, L, Makrides, M. 2.8 Nutrition in pregnancy and lactation. World Rev Nutr Diet. 2015. 113:127-33. doi:10.1159/000367872.	Study Design; Book chapter
357.	Man, YB, Chow, KL, Xing, GH, Chan, JKY, Wu, SC, Wong, MH. A pilot study on health risk assessment based on body loadings of PCBs of lactating mothers at Taizhou, China, the world's major site for recycling transformers. Environ Pollut. 2017. 227:364-371. doi:10.1016/j.envpol.2017.04.069.	Intervention/Exposure
358.	Mannion, CA, Gray-Donald, K, Johnson-Down, L, Koski, KG. Lactating women restricting milk are low on select nutrients. J Am Coll Nutr. 2007. 26:149-55.	Intervention/Exposure
359.	Markhus, MW, Graff, IE, Dahl, L, Seldal, CF, Skotheim, S, Braarud, HC, Stormark, KM, Malde, MK. Establishment of a seafood index to assess the seafood consumption in pregnant women. Food & Nutrition Research. 2013. 57:1-11. doi:10.3402/fnr.v57i0.19272.	Outcome
360.	Markovic, TP, Muirhead, R, Overs, S, Kizirian, N, Louie, J, Sweeting, A, Petocz, P, Denyer, G, Hyett, J, Ross, GP, et al. Predictors of birthweight in women at high risk of gestational diabetes mellitus. Obesity research and clinical practice. 2013. 7:e3-e4. doi:10.1016/j.orcp.2013.12.505.	Abstract

	Citation	Rationale
361.	Markovic, TP, Muirhead, R, Overs, S, Ross, GP, Louie, JC, Kizirian, N, Denyer, G, Petocz, P, Hyett, J, Brand-Miller, JC. Randomized Controlled Trial Investigating the Effects of a Low-Glycemic Index Diet on Pregnancy Outcomes in Women at High Risk of Gestational Diabetes Mellitus: The GI Baby 3 Study. Diabetes Care. 2016. 39:31-8. doi:10.2337/dc15-0572.	Comparator
362.	Marshburn, MK. Helping Obese Pregnant Women Achieve Healthy Weight Gain: Is Provider Intervention Feasible? Helping Obese Pregnant Women Achieve Healthy Weight Gain: Is Provider Intervention Feasible? 2017. :1-1.	Dissertation
363.	Martin, CL, Siega-Riz, AM, Sotres-Alvarez, D, Robinson, WR, Daniels, JL, Perrin, EM, Stuebe, AM. Maternal Dietary Patterns during Pregnancy Are Associated with Child Growth in the First 3 Years of Life. J Nutr. 2016. 146:2281-2288. doi:10.3945/jn.116.234336.	Intervention/Exposure; Outcome
364.	Martin, CL, Siega-Riz, AM, Sotres-Alvarez, D, Robinson, WR, Daniels, JL, Perrin, EM, Stuebe, AM. Maternal Dietary Patterns are Associated with Lower Levels of Cardiometabolic Markers during Pregnancy. Paediatr Perinat Epidemiol. 2016. 30:246-55. doi:10.1111/ppe.12279.	Outcome
365.	Martin, J, MacDonald-Wicks, L, Hure, A, Smith, R, Collins, CE. Reducing postpartum weight retention and improving breastfeeding outcomes in overweight women: a pilot randomised controlled trial. Nutrients. 2015. 7:1464-79. doi:10.3390/nu7031464.	Intervention/Exposure
366.	Martinez-Galiano, JM, Olmedo-Requena, R, Barrios-Rodriguez, R, Amezcua-Prieto, C, Bueno-Cavanillas, A, Salcedo-Bellido, I, Jimenez-Moleon, JJ, Delgado-Rodriguez, M. Effect of Adherence to a Mediterranean Diet and Olive Oil Intake during Pregnancy on Risk of Small for Gestational Age Infants. Nutrients. 2018. 10. doi:10.3390/nu10091234.	Study Design; Outcome
367.	Martins, AP, Benicio, MH. Influence of dietary intake during gestation on postpartum weight retention. Rev Saude Publica. 2011. 45:870-7. doi:10.1590/s0034-89102011005000056.	Population
368.	Martins, MC, Trujillo, J, Freitas-Vilela, AA, Farias, DR, Rosado, EL, Struchiner, CJ, Kac, G. Associations between obesity candidate gene polymorphisms (fat mass and obesity-associated (FTO), melanocortin-4 receptor (MC4R), leptin (LEP) and leptin receptor (LEPR)) and dietary intake in pregnant women. Br J Nutr. 2018. 120:454-463. doi:10.1017/s0007114518001423.	Outcome
369.	Maslova, E, Halldorsson, TI, Astrup, A, Olsen, SF. Dietary protein-to-carbohydrate ratio and added sugar as determinants of excessive gestational weight gain: a prospective cohort study. BMJ Open. 2015. 5:e005839. doi:10.1136/bmjopen-2014-005839.	Intervention/Exposure
370.	Maslova, E, Rytter, D, Bech, BH, Henriksen, TB, Olsen, SF, Halldorsson, TI. Maternal intake of fat in pregnancy and offspring metabolic health - A prospective study with 20 years of follow-up. Clin Nutr. 2016. 35:475-483. doi:10.1016/j.clnu.2015.03.018.	Intervention/Exposure; Outcome

	Citation	Rationale
371.	Maugeri, A, Barchitta, M, Agrifoglio, O, Favara, G, La Mastra, C, La Rosa, MC, Magnano San Lio, R, Panella, M, Cianci, A, Agodi, A. The impact of social determinants and lifestyles on dietary patterns during pregnancy: evidence from the "Mamma & Bambino" study. Ann Ig. 2019. 31:81-89. doi:10.7416/ai.2019.2280.	Study Design; Outcome
372.	McGiveron, A, Foster, S, Pearce, J, Taylor, MA, McMullen, S, Langley-Evans, SC. Limiting antenatal weight gain improves maternal health outcomes in severely obese pregnant women: findings of a pragmatic evaluation of a midwife-led intervention. J Hum Nutr Diet. 2015. 28 Suppl 1:29-37. doi:10.1111/jhn.12240.	Intervention/Exposure
373.	McGowan, CA, Curran, S, McAuliffe, FM. Relative validity of a food frequency questionnaire to assess nutrient intake in pregnant women. Journal of Human Nutrition & Dietetics. 2014. :167-174. doi:10.1111/jhn.12120.	Outcome
374.	McGowan, CA, McAuliffe, FM. Maternal dietary patterns and associated nutrient intakes during each trimester of pregnancy. Public Health Nutr. 2013. 16:97-107. doi:10.1017/s1368980012000997.	Outcome
375.	McGowan, CA, Walsh, JM, Byrne, J, Curran, S, McAuliffe, FM. The influence of a low glycemic index dietary intervention on maternal dietary intake, glycemic index and gestational weight gain during pregnancy: a randomized controlled trial. Nutr J. 2013. 12:140. doi:10.1186/1475-2891-12-140.	Intervention/Exposure
376.	McGuire, E. Breastfeeding and high maternal body mass index. Breastfeed Rev. 2013. 21:7-14.	Study Design
377.	McGurk, P, Hill, AJ, McCance, DR. An investigation of dietary intake of pregnant women in the third trimester in Northern Ireland. Journal of Human Nutrition & Dietetics. 2011. 24:293-294. doi:10.1111/j.1365-277X.2011.01175_22.x.	Conference abstract
378.	McIlvride, S, Nikolova, V, Fan, HM, McDonald, JAK, Wahlstrom, A, Bellafante, E, Jansen, E, Adorini, L, Shapiro, D, Jones, P, Marchesi, JR, Marschall, HU, Williamson, C. Obeticholic acid ameliorates dyslipidemia but not glucose tolerance in mouse model of gestational diabetes. Am J Physiol Endocrinol Metab. 2019. 317:E399-e410. doi:10.1152/ajpendo.00407.2018.	Intervention/Exposure; Human
379.	McKenzie, KM, Dissanayake, HU, McMullan, R, Caterson, ID, Celermajer, DS, Gordon, A, Hyett, J, Meroni, A, Phang, M, Raynes-Greenow, C, Polson, JW, Skilton, MR. Quantity and Quality of Carbohydrate Intake during Pregnancy, Newborn Body Fatness and Cardiac Autonomic Control: Conferred Cardiovascular Risk? Nutrients. 2017. 9. doi:10.3390/nu9121375.	Intervention/Exposure; Outcome
380.	Meinila, J, Koivusalo, SB, Valkama, A, Rono, K, Erkkola, M, Kautiainen, H, Stach-Lempinen, B, Eriksson, JG. Nutrient intake of pregnant women at high risk of gestational diabetes. Food & nutrition research. 2015. 59. doi:10.3402/fnr.v59.26676.	Outcome

	Citation	Rationale
381.	Meinila, J, Valkama, A, Koivusalo, SB, Stach-Lempinen, B, Lindstrom, J, Kautiainen, H, Eriksson, JG, Erkkola, M. Healthy Food Intake Index (HFII) - Validity and reproducibility in a gestational-diabetes-risk population. BMC Public Health. 2016. 16:680. doi:10.1186/s12889-016-3303-7.	Outcome
382.	Meinila, J, Valkama, A, Koivusalo, SB, Stach-Lempinen, B, Rono, K, Lindstrom, J, Kautiainen, H, Eriksson, JG, Erkkola, M. Is improvement in the Healthy Food Intake Index (HFII) related to a lower risk for gestational diabetes? Br J Nutr. 2017. 117:1103-1109. doi:10.1017/s0007114517001015.	Population; Outcome
383.	Meltzer, HM, Brantsaeter, AL, Nilsen, RM, Magnus, P, Alexander, J, Haugen, M. Effect of dietary factors in pregnancy on risk of pregnancy complications: results from the Norwegian Mother and Child Cohort Study. Am J Clin Nutr. 2011. 94:1970s-1974s. doi:10.3945/ajcn.110.001248.	Study Design; Outcome
384.	Meng, Y, Groth, SW, Li, D. The Association between Obesity-Risk Genes and Gestational Weight Gain Is Modified by Dietary Intake in African American Women. J Nutr Metab. 2018. 2018:5080492. doi:10.1155/2018/5080492.	Intervention/Exposure
385.	Meng, Y, Groth, SW, Stewart, P, Smith, JA. An Exploration of the Determinants of Gestational Weight Gain in African American Women: Genetic Factors and Energy Expenditure. Biol Res Nurs. 2018. 20:118-125. doi:10.1177/1099800417743326.	Intervention/Exposure
386.	Merkx, A, Ausems, M, Bude, L, de Vries, R, Nieuwenhuijze, MJ. Weight gain in healthy pregnant women in relation to pre-pregnancy BMI, diet and physical activity. Midwifery. 2015. 31:693-701. doi:10.1016/j.midw.2015.04.008.	Study Design; Intervention/Exposure
387.	Micali, N, Al Essimii, H, Field, AE, Treasure, J. Pregnancy loss of control over eating: A longitudinal study of maternal and child outcomes. American Journal of Clinical Nutrition. 2018. 108:101-107. doi:10.1093/ajcn/nqy040.	Intervention/Exposure; Outcome
388.	Mielke, RT. Determinants of excessive gestational weight gain in Mexican American women in Los Angeles. 2010. :174 p-174 p.	Dissertation
389.	Mikkelsen, TB, Osler, M, Orozova-Bekkevold, I, Knudsen, VK, Olsen, SF. Association between fruit and vegetable consumption and birth weight: a prospective study among 43,585 Danish women. Scand J Public Health. 2006. 34:616-22. doi:10.1080/14034940600717688.	Outcome
390.	Milajerdi, A, Tehrani, H, Haghighatdoost, F, Larijani, B, Surkan, PJ, Azadbakht, L. Associations between higher egg consumption during pregnancy with lowered risks of high blood pressure and gestational diabetes mellitus. Int J Vitam Nutr Res. 2018. 88:166-175. doi:10.1024/0300-9831/a000505.	Study Design; Intervention/Exposure

	Citation	Rationale
391.	Min, Y, Djahanbakhch, O, Hutchinson, J, Bhullar, AS, Raveendran, M, Hallot, A, Eram, S, Namugere, I, Nateghian, S, Ghebremeskel, K. Effect of docosahexaenoic acid-enriched fish oil supplementation in pregnant women with Type 2 diabetes on membrane fatty acids and fetal body composition--double-blinded randomized placebo-controlled trial. Diabet Med. 2014. 31:1331-40. doi:10.1111/dme.12524.	Study Design; Intervention/Exposure
392.	Mirmiran, P, Hosseinpour-Niazi, S, Moghaddam-Banaem, L, Lamyian, M, Goshtasebi, A, Azizi, F. Inverse relation between fruit and vegetable intake and the risk of gestational diabetes mellitus. Int J Vitam Nutr Res. 2019. :1-8. doi:10.1024/0300-9831/a000475.	Intervention/Exposure
393.	Mise, N, Ohtsu, M, Ikegami, A, Mizuno, A, Cui, X, Kobayashi, Y, Nakagi, Y, Nohara, K, Yoshida, T, Kayama, F. Hijiki seaweed consumption elevates levels of inorganic arsenic intake in Japanese children and pregnant women. Food Addit Contam Part A Chem Anal Control Expo Risk Assess. 2019. 36:84-95. doi:10.1080/19440049.2018.1562228.	Intervention/Exposure; Outcome
394.	Mitchell, EA, Robinson, E, Clark, PM, Becroft, DM, Glavish, N, Pattison, NS, Pryor, JE, Thompson, JM, Wild, CJ. Maternal nutritional risk factors for small for gestational age babies in a developed country: a case-control study. Arch Dis Child Fetal Neonatal Ed. 2004. 89:F431-5. doi:10.1136/adc.2003.036970.	Outcome
395.	Miyake, Y, Okubo, H, Sasaki, S, Tanaka, K, Hirota, Y. Maternal dietary patterns during pregnancy and risk of wheeze and eczema in Japanese infants aged 16-24 months: the Osaka Maternal and Child Health Study. Pediatr Allergy Immunol. 2011. 22:734-41. doi:10.1111/j.1399-3038.2011.01176.x.	Outcome
396.	Moller, UK, Streym, S, Heickendorff, L, Mosekilde, L, Rejnmark, L. Effects of 25OHD concentrations on chances of pregnancy and pregnancy outcomes: a cohort study in healthy Danish women. Eur J Clin Nutr. 2012. 66:862-8. doi:10.1038/ejcn.2012.18.	Intervention/Exposure; Outcome
397.	Molyneaux, E, Poston, L, Khondoker, M, Howard, LM. Obesity, antenatal depression, diet and gestational weight gain in a population cohort study. Arch Womens Ment Health. 2016. 19:899-907. doi:10.1007/s00737-016-0635-3.	Intervention/Exposure; Outcome
398.	Monteagudo, C, Mariscal-Arcas, M, Heras-Gonzalez, L, Ibanez-Peinado, D, Rivas, A, Olea-Serrano, F. Effects of maternal diet and environmental exposure to organochlorine pesticides on newborn weight in Southern Spain. Chemosphere. 2016. 156:135-142. doi:10.1016/j.chemosphere.2016.04.103.	Intervention/Exposure; Outcome
399.	Moore, VM, Davies, MJ, Willson, KJ, Worsley, A, Robinson, JS. Dietary composition of pregnant women is related to size of the baby at birth. J Nutr. 2004. 134:1820-6. doi:10.1093/jn/134.7.1820.	Intervention/Exposure
400.	Moradi, M, Maracy, MR, Esmaillzadeh, A, Surkan, PJ, Azadbakht, L. Associations Between Dietary Energy Density in Mothers and Growth of Breastfeeding Infants During the First 4 Months of Life. J Am Coll Nutr. 2018. :1-7. doi:10.1080/07315724.2018.1465486.	Intervention/Exposure

	Citation	Rationale
401.	Moran, LJ, Flynn, AC, Louise, J, Deussen, AR, Dodd, JM. The effect of a lifestyle intervention on pregnancy and postpartum dietary patterns determined by factor analysis. Obesity (Silver Spring). 2017. 25:1022-1032. doi:10.1002/oby.21848.	Study Design; Outcome
402.	Moran, LJ, McNaughton, SA, Sui, Z, Cramp, C, Deussen, AR, Grivell, RM, Dodd, JM. The characterisation of overweight and obese women who are under reporting energy intake during pregnancy. BMC Pregnancy Childbirth. 2018. 18:204. doi:10.1186/s12884-018-1826-x.	Intervention/Exposure; Outcome
403.	Moran, LJ, Sui, Z, Cramp, CS, Dodd, JM. A decrease in diet quality occurs during pregnancy in overweight and obese women which is maintained post-partum. Int J Obes (Lond). 2013. 37:704-11. doi:10.1038/ijo.2012.129.	Outcome; Comparator
404.	Moreno, MA. Advice for patients. Breastfeeding as obesity prevention. Arch Pediatr Adolesc Med. 2011. 165:772. doi:10.1001/archpediatrics.2011.140.	Study Design
405.	Moreno-Castilla, C, Hernandez, M, Bergua, M, Alvarez, MC, Arce, MA, Rodriguez, K, Martinez-Alonso, M, Iglesias, M, Mateu, M, Santos, MD, Pacheco, LR, Blasco, Y, Martin, E, Balsells, N, Aranda, N, Mauricio, D. Low-Carbohydrate diet for the treatment of gestational diabetes mellitus: A randomized controlled trial. Diabetes Care. 2013. 36:2233-2238. doi:10.2337/dc12-2714.	Health Status
406.	Morisset, AS, Cote, JA, Michaud, A, Robitaille, J, Tchernof, A, Dube, MC, Veillette, J, Weisnagel, SJ. Dietary intakes in the nutritional management of gestational diabetes mellitus. Can J Diet Pract Res. 2014. 75:64-71. doi:10.3148/75.2.2014.64.	Comparator
407.	Moses, RG, Casey, SA, Quinn, EG, Cleary, JM, Tapsell, LC, Milosavljevic, M, Petocz, P, Brand-Miller, JC. Pregnancy and Glycemic Index Outcomes study: Effects of low glycemic index compared with conventional dietary advice on selected pregnancy outcomes. American Journal of Clinical Nutrition. 2014. 99:517-523. doi:10.3945/ajcn.113.074138.	Intervention/Exposure
408.	Moses, RG, Luebcke, M, Davis, WS, Coleman, KJ, Tapsell, LC, Petocz, P, Brand-Miller, JC. Effect of a low-glycemic-index diet during pregnancy on obstetric outcomes. Am J Clin Nutr. 2006. 84:807-12. doi:10.1093/ajcn/84.4.807.	Intervention/Exposure
409.	Most, J, Amant, MS, Hsia, DS, Altazan, AD, Thomas, DM, Gilmore, LA, Vallo, PM, Beyl, RA, Ravussin, E, Redman, LM. Evidence-based recommendations for energy intake in pregnant women with obesity. J Clin Invest. 2019. 130:4682-4690. doi:10.1172/jci130341.	Intervention/Exposure
410.	Most, J, Rebello, CJ, Altazan, AD, Martin, CK, Amant, MS, Redman, LM. Behavioral Determinants of Objectively Assessed Diet Quality in Obese Pregnancy. Nutrients. 2019. 11. doi:10.3390/nu11071446.	Outcome
411.	Mujsindi, W, Habash, D, Childs, G. Impact of nutrition education on gestational weight gain in obese pregnant women. American journal of obstetrics and gynecology. 2014. 210:S188. doi:10.1016/j.ajog.2013.10.402.	Abstract

	Citation	Rationale
412.	Muliyil, DE, Rose, A, Senthamizh, SV, Chatterjee, T, Helan, J, Kang, G, Muliyil, J. Prevalence and Risk Factors of Vitamin A Deficiency in Children and Women of Childbearing Age in a Southern Indian Tribal Population: A Cross-Sectional Study. Indian J Community Med. 2019. 44:162-165. doi:10.4103/ijcm.IJCM_213_18.	Study Design; Population
413.	Mullaney, L, O'Higgins, AC, Cawley, S, Kennedy, R, McCartney, D, Turner, MJ. Breast-feeding and postpartum maternal weight trajectories. Public Health Nutr. 2016. 19:1397-404. doi:10.1017/s1368980015002967.	Population
414.	Munda, A, Starcic Erjavec, M, Molan, K, Ambrozic Avgustin, J, Zgur-Bertok, D, Pongrac Barlovic, D. Association between pre-pregnancy body weight and dietary pattern with large-for-gestational-age infants in gestational diabetes. Diabetol Metab Syndr. 2019. 11:68. doi:10.1186/s13098-019-0463-5.	Intervention/Exposure; Outcome
415.	Murrin, CM, Heinen, MM, Kelleher, CC. Are Dietary Patterns of Mothers during Pregnancy Related to Children's Weight Status? Evidence from the Lifeways Cross- Generational Cohort Study. AIMS Public Health. 2015. 2:274-296. doi:10.3934/publichealth.2015.3.274.	Outcome
416.	Navarro, P, Mehegan, J, Murrin, CM, Kelleher, CC, Phillips, CM. Adherence to the Healthy Eating Index-2015 across Generations Is Associated with Birth Outcomes and Weight Status at Age 5 in the Lifeways Cross-Generation Cohort Study. Nutrients. 2019. 11. doi:10.3390/nu11040928.	Outcome
417.	Ng, SK, Cameron, CM, Hills, AP, McClure, RJ, Scuffham, PA. Socioeconomic disparities in prepregnancy BMI and impact on maternal and neonatal outcomes and postpartum weight retention: the EFHL longitudinal birth cohort study. BMC Pregnancy Childbirth. 2014. 14:314. doi:10.1186/1471-2393-14-314.	Study Design; Intervention/Exposure
418.	Nicklas, JM, Zera, CA, Seely, EW. Predictors of very early postpartum weight loss in women with recent gestational diabetes mellitus. J Matern Fetal Neonatal Med. 2018. :1-7. doi:10.1080/14767058.2018.1487937.	Intervention/Exposure
419.	Nikniaz, L, Jr, Mahdavi, R, Arefhoesseini, SR, Sowti Khiabani, M. Association between fat content of breast milk and maternal nutritional status and infants' weight in tabriz, iran. Malays J Nutr. 2009. 15:37-44.	Intervention/Exposure; Outcome
420.	Nikniaz, L, Mahavi, R, Ostadrahimi, A, Nikniaz, Z, Taghipour, S. Synbiotic supplementation is not effective on breast milk selenium concentrations and growth of exclusively breast fed infants: a pilot study. Int J Vitam Nutr Res. 2019. 1-7. doi:10.1024/0300-9831/a000549.	Intervention/Exposure; Outcome
421.	Nikniaz, L, Mahdavi, R, Gargari, BP, Gayem Magami, SJ, Nikniaz, Z. Maternal body mass index, dietary intake and socioeconomic status: differential effects on breast milk zinc, copper and iron content. Health Promot Perspect. 2011. 1:140-6. doi:10.5681/hpp.2011.015.	Study Design; Intervention/Exposure

	Citation	Rationale
422.	Normia, J, Niinivirta-Joutsa, K, Isolauri, E, Jääskeläinen, SK, Laitinen, K. Perinatal nutrition impacts on the functional development of the visual tract in infants. Pediatric Research. 2019. 85:72-78. doi:10.1038/s41390-018-0161-2.	Intervention/Exposure; Comparator
423.	Northstone, K, Emmett, P, Rogers, I. Dietary patterns in pregnancy and associations with socio-demographic and lifestyle factors. Eur J Clin Nutr. 2008. 62:471-9. doi:10.1038/sj.ejcn.1602741.	Outcome
424.	Nunes, MA, Ferri, CP, Manzolli, P, Soares, RM, Drehmer, M, Buss, C, Giacomello, A, Hoffmann, JF, Ozcariz, S, Melere, C, Manenti, CN, Camey, S, Duncan, BB, Schmidt, MI. Nutrition, mental health and violence: from pregnancy to postpartum Cohort of women attending primary care units in Southern Brazil--ECCAGE study. BMC Psychiatry. 2010. 10:66. doi:10.1186/1471-244x-10-66.	Intervention/Exposure; No Results
425.	Nunes, MA, Pinheiro, AP, Camey, SA, Schmidt, MI. Binge eating during pregnancy and birth outcomes: a cohort study in a disadvantaged population in Brazil. Int J Eat Disord. 2012. 45:827-31. doi:10.1002/eat.22024.	Intervention/Exposure
426.	Nykjaer, C, Higgs, C, Greenwood, DC, Simpson, NAB, Cade, JE, Alwan, NA. Maternal Fatty Fish Intake Prior to and during Pregnancy and Risks of Adverse Birth Outcomes: Findings from a British Cohort. Nutrients. 2019. 11. doi:10.3390/nu11030643.	Intervention/Exposure
427.	O'Brien, CM, Louise, J, Deussen, A, Dodd, JM. In Overweight or Obese Pregnant Women, Maternal Dietary Factors are not Associated with Fetal Growth and Adiposity. Nutrients. 2018. 10. doi:10.3390/nu10070870.	Outcome
428.	O'Brien, EC, Alberdi, G, Geraghty, AA, McAuliffe, FM. Lower education predicts poor response to dietary intervention in pregnancy, regardless of neighbourhood affluence: secondary analysis from the ROLO randomised control trial. Public Health Nutr. 2017. 20:2959-2969. doi:10.1017/s1368980017001951.	Intervention/Exposure
429.	O'Brien, EC, Geraghty, AA, O'Sullivan, EJ, Riordan, JA, Horan, MK, Larkin, E, Donnelly, J, Mehegan, J, Twomey, PJ, McAuliffe, FM. Five-year follow up of a low glycaemic index dietary randomised controlled trial in pregnancy-no long-term maternal effects of a dietary intervention. Bjog. 2019. 126:514-524. doi:10.1111/1471-0528.15500.	Intervention/Exposure; Outcome
430.	Oken, E, Ning, Y, Rifas-Shiman, SL, Rich-Edwards, JW, Olsen, SF, Gillman, MW. Diet during pregnancy and risk of preeclampsia or gestational hypertension. Ann Epidemiol. 2007. 17:663-8. doi:10.1016/j.annepidem.2007.03.003.	Intervention/Exposure; Outcome
431.	Olafsdottir, AS, Magnusardottir, AR, Thorgeirsdottir, H, Hauksson, A, Skuladottir, GV, Steingrimsdottir, L. Relationship between dietary intake of cod liver oil in early pregnancy and birthweight. Bjog. 2005. 112:424-9. doi:10.1111/j.1471-0528.2005.00477.x.	Intervention/Exposure
432.	Olafsdottir, AS, Skuladottir, GV, Thorsdottir, I, Hauksson, A, Steingrimsdottir, L. Combined effects of maternal smoking status and dietary intake related to weight gain and birth size parameters. Bjog. 2006. 113:1296-302. doi:10.1111/j.1471-0528.2006.01077.x.	Intervention/Exposure; Comparator

	Citation	Rationale
433.	Olafsdottir, AS, Skuladottir, GV, Thorsdottir, I, Hauksson, A, Steingrimsdottir, L. Maternal diet in early and late pregnancy in relation to weight gain. Int J Obes (Lond). 2006. 30:492-9. doi:10.1038/sj.ijo.0803184.	Intervention/Exposure
434.	Olmedo-Requena, R, Gomez-Fernandez, J, Amezcua-Prieto, C, Mozas-Moreno, J, Khan, KS, Jimenez-Moleon, JJ. Pre-Pregnancy Adherence to the Mediterranean Diet and Gestational Diabetes Mellitus: A Case-Control Study. Nutrients. 2019. 11. doi:10.3390/nu11051003.	Study Design
435.	Olson, CM, Strawderman, MS, Hinton, PS, Pearson, TA. Gestational weight gain and postpartum behaviors associated with weight change from early pregnancy to 1 y postpartum. Int J Obes Relat Metab Disord. 2003. 27:117-27. doi:10.1038/sj.ijo.0802156.	Intervention/Exposure
436.	Olson, CM, Strawderman, MS. Modifiable behavioral factors in a biopsychosocial model predict inadequate and excessive gestational weight gain. J Am Diet Assoc. 2003. 103:48-54. doi:10.1053/jada.2003.50001.	Intervention/Exposure
437.	Opie, RS, Neff, M, Tierney, AC. A behavioural nutrition intervention for obese pregnant women: Effects on diet quality, weight gain and the incidence of gestational diabetes. Aust N Z J Obstet Gynaecol. 2016. 56:364-73. doi:10.1111/ajo.12474.	Intervention/Exposure
438.	Orloff, NC, Flammer, A, Hartnett, J, Liquorman, S, Samelson, R, Hormes, JM. Food cravings in pregnancy: Preliminary evidence for a role in excess gestational weight gain. Appetite. 2016. 105:259-65. doi:10.1016/j.appet.2016.04.040.	Study Design; Intervention/Exposure
439.	Ostadrahimi, A, Nikniaz, L, Mahdavi, R, Hejazi, MA, Nikniaz, Z. Effects of synbiotic supplementation on lactating mothers' energy intake and BMI, and infants' growth. Int J Food Sci Nutr. 2013. 64:711-4. doi:10.3109/09637486.2013.775229.	Intervention/Exposure; Comparator
440.	Ostbye, T, Peterson, BL, Krause, KM, Swamy, GK, Lovelady, CA. Predictors of postpartum weight change among overweight and obese women: results from the Active Mothers Postpartum study. J Womens Health (Larchmt). 2012. 21:215-22. doi:10.1089/jwh.2011.2947.	Intervention/Exposure; Population
441.	Overby, NC, Hillesund, ER, Sagedal, LR, Vistad, I, Bere, E. The Fit for Delivery study: rationale for the recommendations and test-retest reliability of a dietary score measuring adherence to 10 specific recommendations for prevention of excessive weight gain during pregnancy. Matern Child Nutr. 2015. 11:20-32. doi:10.1111/mcn.12026.	Intervention/Exposure; Outcome
442.	Padilha, P, Felizardo, C, Saunders, C, Cunha, L, Pinheiro, A, Belfort, G, Santos, K, Ferreira, N. Consumption of Ultraprocessed Foods by Pregnant Women with Diabetes Mellitus (P11-021-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.P11-021-19.	Abstract
443.	Pajaujiene, S, Dabasinskiene, L, Santos-Rocha, R. Health promotion program for improving women's body composition and active lifestyle in postpartum: A pilot study. Acta Medica Mediterranea. 2018. 34:1365-1375. doi:10.19193/0393-6384_2018_5_209.	Intervention/Exposure

	Citation	Rationale
444.	Paknahad, Z, Fallah, A, Moravejolahkami, AR. Maternal Dietary Patterns and Their Association with Pregnancy Outcomes. Clin Nutr Res. 2019. 8:64-73. doi:10.7762/cnr.2019.8.1.64.	Outcome
445.	Palmer, JR, Kipping-Ruane, K, Wise, LA, Yu, J, Rosenberg, L. Lactation in Relation to Long-Term Maternal Weight Gain in African-American Women. Am J Epidemiol. 2015. 181:932-9. doi:10.1093/aje/kwv027.	Intervention/Exposure; Outcome
446.	Papadopoulou, E, Kogevinas, M, Botsivali, M, Pedersen, M, Besselink, H, Mendez, MA, Fleming, S, Hardie, LJ, Knudsen, LE, Wright, J, Agramunt, S, Sunyer, J, Granum, B, Gutzkow, KB, Brunborg, G, Alexander, J, Meltzer, HM, Brantsaeter, AL, Sarri, K, Chatzi, L, Merlo, DF, Kleinjans, JC, Haugen, M. Maternal diet, prenatal exposure to dioxin-like compounds and birth outcomes in a European prospective mother-child study (NewGeneris). Sci Total Environ. 2014. 484:121-8. doi:10.1016/j.scitotenv.2014.03.047.	Outcome
447.	Parisi, F, Rousian, M, Huijgen, NA, Koning, AHJ, Willemsen, SP, de Vries, JHM, Cetin, I, Steegers, EAP, Steegers-Theunissen, RPM. Periconceptional maternal 'high fish and olive oil, low meat' dietary pattern is associated with increased embryonic growth: The Rotterdam Periconceptional Cohort (Predict) Study. Ultrasound Obstet Gynecol. 2017. 50:709-716. doi:10.1002/uog.17408.	Outcome
448.	Park, HJ, Lee, J, Kim, JM, Lee, HA, Kim, SH, Kim, Y. A study of snack consumption, night-eating habits, and nutrient intake in gestational diabetes mellitus. Clin Nutr Res. 2013. 2:42-51. doi:10.7762/cnr.2013.2.1.42.	Intervention/Exposure
449.	Parker, H, McCurdy, K, Tovar, A, Vadiveloo, M. The Relationship Between Gestational Weight Gain, Pre-pregnancy BMI, and Prenatal Diet Quality (P18-039-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz039.P18-039-19.	Study Design
450.	Parker, HW, Tovar, A, McCurdy, K, Vadiveloo, M. Associations between pre-pregnancy BMI, gestational weight gain, and prenatal diet quality in a national sample. PLoS One. 2019. 14:e0224034. doi:10.1371/journal.pone.0224034.	Only presented DP score by GWG, not GWG by DP score
451.	Parlapani, E, Agakidis, C, Karagiozoglou-Lampoudi, T, Sarafidis, K, Agakidou, E, Athanasiadis, A, Diamanti, E. The Mediterranean diet adherence by pregnant women delivering prematurely: association with size at birth and complications of prematurity. J Matern Fetal Neonatal Med. 2017. :1-8. doi:10.1080/14767058.2017.1399120.	Study Design; Diet assessed at same time as weight gain
452.	Pathirathna, ML, Sekijima, K, Sadakata, M, Fujiwara, N, Muramatsu, Y, Wimalasiri, KMS. Impact of Second Trimester Maternal Dietary Intake on Gestational Weight Gain and Neonatal Birth Weight. Nutrients. 2017. 9. doi:10.3390/nu9060627.	Intervention/Exposure
453.	Patwardhan, G, Soni, A, Rachwani, N, Kadam, S, Patole, S, Pandit, A. Factors Associated with Time to Full Feeds in Preterm Very Low Birth Weight Infants. J Trop Pediatr. 2018. 64:495-500. doi:10.1093/tropej/fmx102.	Outcome; Country

	Citation	Rationale
454.	Paul, IM, Williams, JS, Anzman-Frasca, S, Beiler, JS, Makova, KD, Marini, ME, Hess, LB, Rzucidlo, SE, Verdiglione, N, Mindell, JA, Birch, LL. The Intervention Nurses Start Infants Growing on Healthy Trajectories (INSIGHT) study. BMC Pediatr. 2014. 14:184. doi:10.1186/1471-2431-14-184.	Intervention/Exposure; Outcome
455.	Pauley, AM, Hohman, E, Savage, JS, Rivera, DE, Guo, P, Leonard, KS, Symons Downs, D. Gestational Weight Gain Intervention Impacts Determinants of Healthy Eating and Exercise in Overweight/Obese Pregnant Women. Journal of Obesity. 2018. 2018. doi:10.1155/2018/6469170.	Intervention/Exposure; Comparator
456.	Peccei, A, Blake-Lamb, T, Rahilly, D, Hatoum, I, Bryant, A. Intensive Prenatal Nutrition Counseling in a Community Health Setting. Obstetrics and Gynecology. 2017. 130:423-432. doi:10.1097/AOG.0000000000002134.	Intervention/Exposure
457.	Pellonpera, O, Koivuniemi, E, Vahlberg, T, Mokkala, K, Tertti, K, Ronnemaa, T, Laitinen, K. Dietary quality influences body composition in overweight and obese pregnant women. Clin Nutr. 2019. 38:1613-1619. doi:10.1016/j.clnu.2018.08.029.	Outcome; Outcome not reported by DP adherence
458.	Peraita-Costa, I, Llopis-Gonzalez, A, Perales-Marin, A, Sanz, F, Llopis-Morales, A, Morales-Suarez-Varela, M. A Retrospective Cross-Sectional Population-Based Study on Prenatal Levels of Adherence to the Mediterranean Diet: Maternal Profile and Effects on the Newborn. Int J Environ Res Public Health. 2018. 15. doi:10.3390/ijerph15071530.	Study Design
459.	Perez-Ferre, N, Del Valle, L, Torrejon, MJ, Barca, I, Calvo, MI, Matia, P, Rubio, MA, Calle-Pascual, AL. Diabetes mellitus and abnormal glucose tolerance development after gestational diabetes: A three-year, prospective, randomized, clinical-based, Mediterranean lifestyle interventional study with parallel groups. Clin Nutr. 2015. 34:579-85. doi:10.1016/j.clnu.2014.09.005.	Population; Outcome
460.	Petersen, SB, Rasmussen, MA, Olsen, SF, Vestergaard, P, Mølgaard, C, Halldorsson, T, Strøm, M. Maternal Dietary Patterns during Pregnancy in Relation to Offspring Forearm Fractures: Prospective Study from the Danish National Birth Cohort. Nutrients. 2015. 7:2382-2400. doi:10.3390/nu7042382.	Outcome
461.	Petrella, E, Bruno, R, Pedrielli, G, Bertarini, V, Neri, I, Facchinetti, F. A customized low glycaemic-index (GI) diet prevents both the gestational diabetes mellitus (GDM) and the large for gestational age (LGA) babies in overweight/obese pregnant women. American journal of obstetrics and gynecology. 2016. 214:S159-.	Abstract
462.	Petrella, E, Facchinetti, F, Bertarini, V, Pignatti, L, Neri, I, Battistini, NC. Occurrence of pregnancy complications in women with BMI >25 submitted to a healthy lifestyle and eating habits program. American journal of obstetrics and gynecology. 2013. 208:S33-S34. doi:10.1016/j.ajog.2012.10.229.	Abstract

	Citation	Rationale
463.	Petrella, E, Malavolti, M, Bertarini, V, Pignatti, L, Neri, I, Battistini, NC, Facchinetti, F. Gestational weight gain in overweight and obese women enrolled in a healthy lifestyle and eating habits program. J Matern Fetal Neonatal Med. 2014. 27:1348-52. doi:10.3109/14767058.2013.858318.	Intervention/Exposure
464.	Phang, M, Dissanayake, HU, McMullan, RL, Hyett, J, Gordon, A, Garg, ML, Skilton, MR. Increased alpha-Linolenic Acid Intake during Pregnancy is Associated with Higher Offspring Birth Weight. Curr Dev Nutr. 2019. 3:nzy081. doi:10.1093/cdn/nzy081.	Intervention/Exposure; Outcome
465.	Phelan, S, Phipps, MG, Abrams, B, Darroch, F, Grantham, K, Schaffner, A, Wing, RR. Does behavioral intervention in pregnancy reduce postpartum weight retention? Twelve-month outcomes of the Fit for Delivery randomized trial. Am J Clin Nutr. 2014. 99:302-11. doi:10.3945/ajcn.113.070151.	Intervention/Exposure; Population
466.	Phelan, S, Phipps, MG, Abrams, B, Darroch, F, Schaffner, A, Wing, RR. Randomized trial of a behavioral intervention to prevent excessive gestational weight gain: the fit for delivery study. Obstetrical & gynecological survey. 2011. 66:471-472. doi:10.1097/OGX.0b013e31823520b3.	Editorial comment
467.	Phelan, S, Wing, RR, Brannen, A, McHugh, A, Hagobian, TA, Schaffner, A, Jelalian, E, Hart, CN, Scholl, TO, Munoz-Christian, K, Yin, E, Phipps, MG, Keadle, S, Abrams, B. Randomized controlled clinical trial of behavioral lifestyle intervention with partial meal replacement to reduce excessive gestational weight gain. American Journal of Clinical Nutrition. 2018. 107:183-194. doi:10.1093/ajcn/nqx043.	Intervention/Exposure
468.	Pinto, TJ, Farias, DR, Rebelo, F, Lepsch, J, Vaz, JS, Moreira, JD, Cunha, GM, Kac, G. Lower inter-partum interval and unhealthy life-style factors are inversely associated with n-3 essential fatty acids changes during pregnancy: a prospective cohort with Brazilian women. PLoS One. 2015. 10:e0121151. doi:10.1371/journal.pone.0121151.	Intervention/Exposure; Outcome
469.	Plante, AS, Savard, C, Lemieux, S, Carbonneau, E, Robitaille, J, Provencher, V, Morisset, AS. Trimester-Specific Intuitive Eating in Association With Gestational Weight Gain and Diet Quality. J Nutr Educ Behav. 2019. 51:677-683. doi:10.1016/j.jneb.2019.01.011.	Intervention/Exposure; Outcome
470.	Pollak, KI, Alexander, SC, Bennett, G, Lyna, P, Coffman, CJ, Bilheimer, A, Farrell, D, Bodner, ME, Swamy, GK, Ostbye, T. Weight-related SMS texts promoting appropriate pregnancy weight gain: a pilot study. Patient education and counseling. 2014. 97:256-260. doi:10.1016/j.pec.2014.07.030.	Intervention/Exposure
471.	Pomerleau, CS, Brouwer, RJ, Jones, LT. Weight concerns in women smokers during pregnancy and postpartum. Addict Behav. 2000. 25:759-67.	Intervention/Exposure

	Citation	Rationale
472.	Poston, L, Bell, R, Croker, H, Flynn, AC, Godfrey, KM, Goff, L, Hayes, L, Khazaezadeh, N, Nelson, SM, Oteng-Ntim, E, Pasupathy, D, Patel, N, Robson, SC, Sandall, J, Sanders, TA, Sattar, N, Seed, PT, Wardle, J, Whitworth, MK, Briley, AL. Effect of a behavioural intervention in obese pregnant women (the UPBEAT study): a multicentre, randomised controlled trial. Lancet Diabetes Endocrinol. 2015. 3:767-77. doi:10.1016/s2213-8587(15)00227-2.	Intervention/Exposure
473.	Pullmer, R, Zaitsoff, S, Cobb, R. Body Satisfaction During Pregnancy: The Role of Health-Related Habit Strength. Matern Child Health J. 2018. 22:391-400. doi:10.1007/s10995-017-2406-9.	Intervention/Exposure; Outcome
474.	Quick, V, Martin-Biggers, J, Byrd-Bredbenner, C. Moms' Eating, Sleeping, and Physical Activity Behaviors Differ By Weight Status: Implications for Nutrition Education Interventions. Journal of the Academy of Nutrition & Dietetics. 2016. 116:A24-A24. doi:10.1016/j.jand.2016.06.077.	Conference abstract
475.	Quinlivan, JA, Lam, LT, Fisher, J. A randomised trial of a four-step multidisciplinary approach to the antenatal care of obese pregnant women. Aust N Z J Obstet Gynaecol. 2011. 51:141-6. doi:10.1111/j.1479-828X.2010.01268.x.	Intervention/Exposure
476.	Quinn, EA, Kuzawa, CW. A dose-response relationship between fish consumption and human milk DHA content among Filipino women in Cebu City, Philippines. Acta Paediatr. 2012. 101:e439-45. doi:10.1111/j.1651-2227.2012.02777.x.	Outcome
477.	Quinn, EA, Largado, F, Power, M, Kuzawa, CW. Predictors of breast milk macronutrient composition in Filipino mothers. Am J Hum Biol. 2012. 24:533-40. doi:10.1002/ajhb.22266.	Study Design; Outcome
478.	Radesky, JS, Oken, E, Rifas-Shiman, SL, Kleinman, KP, Rich-Edwards, JW, Gillman, MW. Diet during early pregnancy and development of gestational diabetes. Paediatr Perinat Epidemiol. 2008. 22:47-59. doi:10.1111/j.1365-3016.2007.00899.x.	Outcome
479.	Radwan, H, Hashim, M, Shaker Obaid, R, Hasan, H, Naja, F, Al Ghazal, H, Jan Jan Mohamed, H, Rizk, R, Al Hilali, M, Rayess, R, Izzaldin, G. The Mother-Infant Study Cohort (MISC): Methodology, challenges, and baseline characteristics. PLoS One. 2018. 13:e0198278. doi:10.1371/journal.pone.0198278.	Study Design; Intervention/Exposure
480.	Ramage, SM, McCargar, LJ, Berglund, C, Harber, V, Bell, RC. Assessment of Pre-Pregnancy Dietary Intake with a Food Frequency Questionnaire in Alberta Women. Nutrients. 2015. 7:6155-6166. doi:10.3390/nu7085277.	Outcome
481.	Ramon, R, Ballester, F, Iniguez, C, Rebagliato, M, Murcia, M, Esplugues, A, Marco, A, Garcia de la Hera, M, Vioque, J. Vegetable but not fruit intake during pregnancy is associated with newborn anthropometric measures. J Nutr. 2009. 139:561-7. doi:10.3945/jn.108.095596.	Intervention/Exposure; Outcome

	Citation	Rationale
482.	Rauh, K, Gunther, J, Kunath, J, Stecher, L, Hauner, H. Lifestyle intervention to prevent excessive maternal weight gain: mother and infant follow-up at 12 months postpartum. BMC pregnancy and childbirth. 2015. 15. doi:10.1186/s12884-015-0701-2.	Intervention/Exposure
483.	Redman, LM, Gilmore, LA, Breaux, J, Thomas, DM, Elkind-Hirsch, K, Stewart, T, Hsia, DS, Burton, J, Apolzan, JW, Cain, LE, Altazan, AD, Ragusa, S, Brady, H, Davis, A, Tilford, JM, Sutton, EF, Martin, CK. Effectiveness of SmartMoms, a Novel eHealth Intervention for Management of Gestational Weight Gain: Randomized Controlled Pilot Trial. JMIR Mhealth Uhealth. 2017. 5:e133. doi:10.2196/mhealth.8228.	Intervention/Exposure
484.	Renault, KM, Carlsen, EM, Norgaard, K, Nilas, L, Pryds, O, Secher, NJ, Cortes, D, Jensen, JE, Olsen, SF, Halldorsson, TI. Intake of carbohydrates during pregnancy in obese women is associated with fat mass in the newborn offspring. Am J Clin Nutr. 2015. 102:1475-81. doi:10.3945/ajcn.115.110551.	Intervention/Exposure; Outcome
485.	Renault, KM, Carlsen, EM, Norgaard, K, Nilas, L, Pryds, O, Secher, NJ, Olsen, SF, Halldorsson, TI. Intake of Sweets, Snacks and Soft Drinks Predicts Weight Gain in Obese Pregnant Women: Detailed Analysis of the Results of a Randomised Controlled Trial. PLoS One. 2015. 10:e0133041. doi:10.1371/journal.pone.0133041.	Intervention/Exposure
486.	Renault, KM, Norgaard, K, Nilas, L, Carlsen, EM, Cortes, D, Pryds, O, Secher, NJ. The Treatment of Obese Pregnant Women (TOP) study: a randomized controlled trial of the effect of physical activity intervention assessed by pedometer with or without dietary intervention in obese pregnant women. Am J Obstet Gynecol. 2014. 210:134.e1-9. doi:10.1016/j.ajog.2013.09.029.	Intervention/Exposure
487.	Renzaho, AM, Skouteris, H, Oldroyd, J. Preventing gestational diabetes mellitus among migrant women and reducing obesity and type 2 diabetes in their offspring: a call for culturally competent lifestyle interventions in pregnancy. J Am Diet Assoc. 2010. 110:1814-7. doi:10.1016/j.jada.2010.09.017.	Study Design
488.	Rerkasem, K, Wongthanee, A, Rerkasem, A, Chiowanich, P, Sritara, P, Pruenglampoo, S, Mangklabruks, A. Intrauterine nutrition and carotid intimal media thickness in young Thai adults. Asia Pac J Clin Nutr. 2012. 21:247-52.	Outcome
489.	Reyes, L, Garcia, R, Ruiz, S, Dehghan, M, Lopez-Jaramillo, P. Nutritional status among women with pre-eclampsia and healthy pregnant and non-pregnant women in a Latin American country. J Obstet Gynaecol Res. 2012. 38:498-504. doi:10.1111/j.1447-0756.2011.01763.x.	Study Design; Outcome
490.	Rhodes, ET, Pawlak, DB, Takoudes, TC, Ebbeling, CB, Feldman, HA, Lovesky, MM, Cooke, EA, Leidig, MM, Ludwig, DS. Effects of a low-glycemic load diet in overweight and obese pregnant women: a pilot randomized controlled trial. Am J Clin Nutr. 2010. 92:1306-15. doi:10.3945/ajcn.2010.30130.	Intervention/Exposure

	Citation	Rationale
491.	Rich-Edwards, JW, Stuart, JJ, Skurnik, G, Roche, AT, Tsigas, E, Fitzmaurice, GM, Wilkins-Haug, LE, Levkoff, SE, Seely, EW. Randomized Trial to Reduce Cardiovascular Risk in Women with Recent Preeclampsia. J Womens Health (Larchmt). 2019. doi:10.1089/jwh.2018.7523.	Population; Outcome
492.	Rodriguez-Bernal, CL, Rebagliato, M, Iniguez, C, Vioque, J, Navarrete-Munoz, EM, Murcia, M, Bolumar, F, Marco, A, Ballester, F. Diet quality in early pregnancy and its effects on fetal growth outcomes: the Infancia y Medio Ambiente (Childhood and Environment) Mother and Child Cohort Study in Spain. Am J Clin Nutr. 2010. 91:1659-66. doi:10.3945/ajcn.2009.28866.	Outcome
493.	Rogers, I, Emmett, P, Ness, A, Golding, J. Maternal fish intake in late pregnancy and the frequency of low birth weight and intrauterine growth retardation in a cohort of British infants. J Epidemiol Community Health. 2004. 58:486-92. doi:10.1136/jech.2003.013565.	Intervention/Exposure; Outcome
494.	Rohatgi, KW, Tinius, RA, Cade, WT, Steele, EM, Cahill, AG, Parra, DC. Relationships between consumption of ultra-processed foods, gestational weight gain and neonatal outcomes in a sample of US pregnant women. PeerJ. 2017. 5:e4091. doi:10.7717/peerj.4091.	Study Design
495.	Romon, M, Nuttens, MC, Vambergue, A, Verier-Mine, O, Biausque, S, Lemaire, C, Fontaine, P, Salomez, JL, Beuscart, R. Higher carbohydrate intake is associated with decreased incidence of newborn macrosomia in women with gestational diabetes. J Am Diet Assoc. 2001. 101:897-902. doi:10.1016/s0002-8223(01)00220-6.	Outcome
496.	Ruiz-Gracia, T, Duran, A, Fuentes, M, Rubio, MA, Runkle, I, Carrera, EF, Torrejon, MJ, Bordiu, E, Valle, LD, Garcia de la Torre, N, Bedia, AR, Montanez, C, Familiar, C, Calle-Pascual, AL. Lifestyle patterns in early pregnancy linked to gestational diabetes mellitus diagnoses when using IADPSG criteria. The St Carlos gestational study. Clin Nutr. 2016. 35:699-705. doi:10.1016/j.clnu.2015.04.017.	Intervention/Exposure
497.	Sally, EOF, Anjos, LAD, Ramos, EG, Fonseca, VM, Silva, Bamd, Wahrlich, V. Dietary intake of pregnant adolescents cared for in primary health care units of a Brazilian urban municipality. Nutr Hosp. 2018. 35:596-605. doi:10.20960/nh.1412.	Intervention/Exposure; Outcome
498.	Salmenhaara, M, Uusitalo, L, Uusitalo, U, Kronberg-Kippila, C, Sinkko, H, Ahonen, S, Veijola, R, Knip, M, Kaila, M, Virtanen, SM. Diet and weight gain characteristics of pregnant women with gestational diabetes. Eur J Clin Nutr. 2010. 64:1433-40. doi:10.1038/ejcn.2010.167.	Intervention/Exposure; Outcome
499.	Salunkhe, AH, Pratinidhi, A, Salunkhe, JA, Kakade, SV, Mohite, VR, Hiremath, P. Frequency and nutrient content of meals of the mothers and the birth weight and gestational age of the baby. Journal of Krishna Institute of Medical Sciences University. 2018. 7:33-41.	Outcome

	Citation	Rationale
500.	Samur, G, Akkus, Ö Ö, Ede, G, Ayaz, A, Akyol, A, Akkus, M, Danisman, N. Nutritional status among women with preeclampsia and healthy pregnant women. Progress in Nutrition. 2016. 18:360-368.	Study Design; Intervention/Exposure
501.	Santos, KD, Moreira, TM, Belfort, GP, Silva, Cfmd, Padilha, PC, Barros, DC, Saunders, C. Adaptation of DASH diet (Dietary Approach to Stop Hypertension) for postpartum nutritional care at primary healthcare. Rev Bras Epidemiol. 2019. 22:e190035. doi:10.1590/1980-549720190035.	Outcome
502.	Sartorelli, DS, Barbieri, P, Perdona, GC. Fried food intake estimated by the multiple source method is associated with gestational weight gain. Nutr Res. 2014. 34:667-73. doi:10.1016/j.nutres.2014.07.008.	Intervention/Exposure
503.	Sauder, KA, Starling, AP, Shapiro, AL, Kaar, JL, Ringham, BM, Glueck, DH, Leiferman, JA, Siega-Riz, AM, Dabelea, D. Diet, physical activity and mental health status are associated with dysglycaemia in pregnancy: the Healthy Start Study. Diabet Med. 2016. 33:663-7. doi:10.1111/dme.13093.	Intervention/Exposure; Outcome
504.	Saunders, L, Guldner, L, Costet, N, Kadhel, P, Rouget, F, Monfort, C, Thome, JP, Multigner, L, Cordier, S. Effect of a Mediterranean diet during pregnancy on fetal growth and preterm delivery: results from a French Caribbean Mother-Child Cohort Study (TIMOUN). Paediatr Perinat Epidemiol. 2014. 28:235-44. doi:10.1111/ppe.12113.	Study Design; Diet assessed after delivery
505.	Savard, C, Lemieux, S, Carbonneau, E, Provencher, V, Gagnon, C, Robitaille, J, Morisset, AS. Trimester-Specific Assessment of Diet Quality in a Sample of Canadian Pregnant Women. Int J Environ Res Public Health. 2019. 16. doi:10.3390/ijerph16030311.	Outcome
506.	Schoenaker, DA, Soedamah-Muthu, SS, Callaway, LK, Mishra, GD. Pre-pregnancy dietary patterns and risk of gestational diabetes mellitus: results from an Australian population-based prospective cohort study. Diabetologia. 2015. 58:2726-35. doi:10.1007/s00125-015-3742-1.	Population; Outcome
507.	Schoenaker, DA, Soedamah-Muthu, SS, Mishra, GD. Quantifying the mediating effect of body mass index on the relation between a Mediterranean diet and development of maternal pregnancy complications: the Australian Longitudinal Study on Women's Health. Am J Clin Nutr. 2016. 104:638-45. doi:10.3945/ajcn.116.133884.	Outcome
508.	Sedaghat, F, Akhoondan, M, Ehteshami, M, Aghamohammadi, V, Ghanei, N, Mirmiran, P, Rashidkhani, B. Maternal Dietary Patterns and Gestational Diabetes Risk: A Case-Control Study. Journal of Diabetes Research. 2017. 2017. doi:10.1155/2017/5173926.	Outcome
509.	Senol Eren, N, Sencan, I, Aksoy, H, Koc, EM, Kasim, I, Kahveci, R, Samur, G, Ozkara, A. Evaluation of dietary habits during pregnancy. Turk J Obstet Gynecol. 2015. 12:89-95. doi:10.4274/tjod.79923.	Study Design; Intervention/Exposure

	Citation	Rationale
510.	Shah, BS, Freeland-Graves, JH, Cahill, JM, Lu, H, Graves, GR. Diet quality as measured by the healthy eating index and the association with lipid profile in low-income women in early postpartum. J Am Diet Assoc. 2010. 110:274-9. doi:10.1016/j.jada.2009.10.038.	Population
511.	Shankar, K, Zhong, Y, Kang, P, Chintapalli, S, Thakali, K, Piccolo, B, Andres, A. Maternal BMI Modulates Placental Expression of Lipid Transport, Metabolism and Innate Immune Response Genes at Term (OR35-01-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.OR35-01-19.	Abstract
512.	Shapiro, AL, Kaar, JL, Crume, TL, Starling, AP, Siega-Riz, AM, Ringham, BM, Glueck, DH, Norris, JM, Barbour, LA, Friedman, JE, Dabelea, D. Maternal diet quality in pregnancy and neonatal adiposity: the Healthy Start Study. Int J Obes (Lond). 2016. 40:1056-62. doi:10.1038/ijo.2016.79.	Outcome
513.	Sharma, SS, Greenwood, DC, Simpson, NAB, Cade, JE. Is dietary macronutrient composition during pregnancy associated with offspring birth weight? An observational study. Br J Nutr. 2018. 119:330-339. doi:10.1017/s0007114517003609.	Intervention/Exposure; Outcome
514.	Sharma, SV, Chuang, RJ, Byrd-Williams, C, Danho, M, Upadhyaya, M, Berens, P, Hoelscher, DM. Pilot evaluation of HEAL - A natural experiment to promote obesity prevention behaviors among low-income pregnant women. Prev Med Rep. 2018. 10:254-262. doi:10.1016/j.pmedr.2018.04.005.	Intervention/Exposure; Outcome
515.	Shieh, C, Yang, Z, Haas, DM, Carpenter, JS. Feasibility and Potential Benefits of a Self-Monitoring Enhanced Lifestyle Intervention to Prevent Excessive Gestational Weight Gain in Women Who Are Overweight or Obese. J Obstet Gynecol Neonatal Nurs. 2017. 46:182-196. doi:10.1016/j.jogn.2016.09.006.	Intervention/Exposure
516.	Shiell, AW, Campbell-Brown, M, Haselden, S, Robinson, S, Godfrey, KM, Barker, DJ. High-meat, low-carbohydrate diet in pregnancy: relation to adult blood pressure in the offspring. Hypertension. 2001. 38:1282-8.	Outcome; Comparator
517.	Shyam, S, Fatimah, A, Rohana, AG, Norasyikin, AW, Nik Shanita, S, Chinna, K, Mohd. Yusof, BN, Nor Azmi, K. Effect of Including Glycaemic Index (GI) Nutrition Education, within the Conventional Healthy Dietary Recommendation Framework, on Body Weight and Composition of Women with Prior Gestational Diabetes Mellitus: Results from a One-Year Randomised Controlled Trial. Malaysian Journal of Nutrition. 2015. 21:269-283.	Intervention/Exposure; Population
518.	Siegmund, T, Rad, NT, Ritterath, C, Siebert, G, Henrich, W, Buhling, KJ. Longitudinal changes in the continuous glucose profile measured by the CGMS in healthy pregnant women and determination of cut-off values. Eur J Obstet Gynecol Reprod Biol. 2008. 139:46-52. doi:10.1016/j.ejogrb.2007.12.006.	Outcome; Comparator

	Citation	Rationale
519.	Simmons, D, Devlieger, R, van Assche, A, Jans, G, Galjaard, S, Corcoy, R, Adelantado, JM, Dunne, F, Desoye, G, Harreiter, J, Kautzky-Willer, A, Damm, P, Mathiesen, ER, Jensen, DM, Andersen, L, Lapolla, A, Dalfra, MG, Bertolotto, A, Wender-Ozegowska, E, Zawiejska, A, Hill, D, Snoek, FJ, Jelsma, JG, van Poppel, MN. Effect of Physical Activity and/or Healthy Eating on GDM Risk: The DALI Lifestyle Study. J Clin Endocrinol Metab. 2017. 102:903-913. doi:10.1210/jc.2016-3455.	Intervention/Exposure
520.	Simmons, D, Jelsma, JG, Galjaard, S, Devlieger, R, van Assche, A, Jans, G, Corcoy, R, Adelantado, JM, Dunne, F, Desoye, G, Harreiter, J, Kautzky-Willer, A, Damm, P, Mathiesen, ER, Jensen, DM, Andersen, LL, Lapolla, A, Dalfra, M, Bertolotto, A, Wender-Ozegowska, E, Zawiejska, A, Hill, D, Rebollo, P, Snoek, FJ, van Poppel, MN. Results From a European Multicenter Randomized Trial of Physical Activity and/or Healthy Eating to Reduce the Risk of Gestational Diabetes Mellitus: The DALI Lifestyle Pilot. Diabetes Care. 2015. 38:1650-6. doi:10.2337/dc15-0360.	Intervention/Exposure
521.	Simmons, D, Devlieger, R, van Assche, A, Galjaard, S, Corcoy, R, Adelantado, JM, Dunne, F, Desoye, G, Kautzky-Willer, A, Damm, P, Mathiesen, ER, Jensen, DM, Andersen, LLT, Lapolla, A, Dalfra, MG, Bertolotto, A, Wender-Ozegowska, E, Zawiejska, A, Hill, D, Snoek, FJ. Association between Gestational Weight Gain, Gestational Diabetes Risk, and Obstetric Outcomes: A Randomized Controlled Trial Post Hoc Analysis. Nutrients. 2018. 10:1568. doi:10.3390/nu10111568.	Intervention/Exposure
522.	Simoes-Wust, AP, Molto-Puigmarti, C, Jansen, EH, van Dongen, MC, Dagnelie, PC, Thijs, C. Organic food consumption during pregnancy and its association with health-related characteristics: the KOALA Birth Cohort Study. Public Health Nutr. 2017. 20:2145-2156. doi:10.1017/s1368980017001215.	Intervention/Exposure
523.	Singh, SB, Madan, J, Coker, M, Hoen, A, Baker, ER, Karagas, MR, Mueller, NT. Does birth mode modify associations of maternal pre-pregnancy BMI and gestational weight gain with the infant gut microbiome? Int J Obes (Lond). 2019. doi:10.1038/s41366-018-0273-0.	Intervention/Exposure
524.	Singhal, A, Kennedy, K, Lanigan, J, Fewtrell, M, Cole, TJ, Stephenson, T, Elias-Jones, A, Weaver, LT, Ibhanesebhor, S, MacDonald, PD, Bindels, J, Lucas, A. Nutrition in infancy and long-term risk of obesity: evidence from 2 randomized controlled trials. Am J Clin Nutr. 2010. 92:1133-44. doi:10.3945/ajcn.2010.29302.	Intervention/Exposure; Outcome
525.	Skaug, MA, Helland, I, Solvoll, K, Saugstad, OD. Presence of ochratoxin A in human milk in relation to dietary intake. Food Addit Contam. 2001. 18:321-7. doi:10.1080/02652030117740.	Outcome
526.	Skreden, M, Bere, E, Sagedal, LR, Vistad, I, Overby, NC. Changes in fruit and vegetable consumption habits from pre-pregnancy to early pregnancy among Norwegian women. BMC Pregnancy Childbirth. 2017. 17:107. doi:10.1186/s12884-017-1291-y.	Intervention/Exposure

	Citation	Rationale
527.	Skreden, M, Hillesund, ER, Wills, AK, Brantsaeter, AL, Bere, E, Overby, NC. Adherence to the New Nordic Diet during pregnancy and subsequent maternal weight development: a study conducted in the Norwegian Mother and Child Cohort Study (MoBa). Br J Nutr. 2018. 119:1286-1294. doi:10.1017/s0007114518000776.	Intervention/Exposure; Population
528.	Slane, JD, Levine, MD. Association of Restraint and Disinhibition to Gestational Weight Gain among Pregnant Former Smokers. Womens Health Issues. 2015. 25:390-5. doi:10.1016/j.whi.2015.03.005.	Intervention/Exposure
529.	Sloan, NL, Lederman, SA, Leighton, J, Himes, JH, Rush, D. The effect of prenatal dietary protein intake on birth weight. Nutrition Research. 2001. 21:129-139. doi:10.1016/S0271-5317(00)00258-X.	Intervention/Exposure; Data collected in 1983
530.	Sommer, C, Sletner, L, Jenum, AK, Mrkrid, K, Andersen, LF, Birkeland, K, Mosdl, A. Ethnic differences in maternal dietary patterns are largely explained by socioeconomic score and integration score: a population-based study. Food & Nutrition Research. 2013. 57:1-12. doi:10.3402/fnr.v57i0.21164.	Study Design; Outcome
531.	Sotres-Alvarez, D, Herring, AH, Siega-Riz, AM. Latent transition models to study women's changing of dietary patterns from pregnancy to 1 year postpartum. Am J Epidemiol. 2013. 177:852-61. doi:10.1093/aje/kws303.	Outcome
532.	Spencer, L, Rollo, M, Hutchesson, M, Collins, C. Perceived healthy eating and physical activity factors influencing weight management in postpartum women: A mixed methods analysis. Obesity Research & Clinical Practice. 2014. 8:96-96. doi:10.1016/j.orcp.2014.10.176.	Conference abstract
533.	Sridhar, SB, Darbinian, J, Ehrlich, SF, Markman, MA, Gunderson, EP, Ferrara, A, Hedderson, MM. Maternal gestational weight gain and offspring risk for childhood overweight or obesity. Am J Obstet Gynecol. 2014. 211:259.e1-8. doi:10.1016/j.ajog.2014.02.030.	Intervention/Exposure; Outcome
534.	Stendell-Hollis, NR, Laudermilk, MJ, West, JL, Thompson, PA, Thomson, CA. Recruitment of lactating women into a randomized dietary intervention: successful strategies and factors promoting enrollment and retention. Contemp Clin Trials. 2011. 32:505-11. doi:10.1016/j.cct.2011.03.007.	Study Design; Outcome
535.	Stephens, TV, Woo, H, Innis, SM, Elango, R. Healthy pregnant women in Canada are consuming more dietary protein at 16- and 36-week gestation than currently recommended by the Dietary Reference Intakes, primarily from dairy food sources. Nutr Res. 2014. 34:569-76. doi:10.1016/j.nutres.2014.07.001.	Study Design; Intervention/Exposure
536.	Stuebe, AM, Oken, E, Gillman, MW. Associations of diet and physical activity during pregnancy with risk for excessive gestational weight gain. Am J Obstet Gynecol. 2009. 201:58.e1-8. doi:10.1016/j.ajog.2009.02.025.	Intervention/Exposure

	Citation	Rationale
537.	Su, T, Lu, J, Ma, H. Lifestyle intervention prevents pregnant woman from gestational diabetes mellitus: a Chinese randomized controlled trial. International journal of clinical and experimental medicine. 2016. 9:23584-23590.	Intervention/Exposure
538.	Suliga, E, Adamczyk-Gruszka, OK. Health behaviours of pregnant women and gestational weight gains -A pilot study. Medical Studies/Studia Medyczne. 2015. 31:161-167. doi:10.5114/ms.2015.54753.	Diet assessed at same time as final weight
539.	Suliga, E, Rokita, W, Adamczyk-Gruszka, O, Pazera, G, Ciesla, E, Gluszek, S. Factors associated with gestational weight gain: a cross-sectional survey. BMC Pregnancy Childbirth. 2018. 18:465. doi:10.1186/s12884-018-2112-7.	Study Design
540.	Surendran, S, Aji, AS, Ariyasra, U, Sari, SR, Malik, SG, Tasrif, N, Yani, FF, Lovegrove, JA, Sudji, IR, Lipoeto, NI, Vimaleswaran, KS. A nutrigenetic approach for investigating the relationship between vitamin B12 status and metabolic traits in Indonesian women. *J Diabetes Metab Disord.* 2019. 18(2):389-399. doi:10.1007/s40200-019-00424-z.	Study Design
541.	Swendeman, D, Comulada, WS, Koussa, M, Worthman, CM, Estrin, D, Rotheram-Borus, MJ, Ramanathan, N. Longitudinal Validity and Reliability of Brief Smartphone Self-Monitoring of Diet, Stress, and Physical Activity in a Diverse Sample of Mothers. JMIR Mhealth Uhealth. 2018. 6:e176. doi:10.2196/mhealth.9378.	Intervention/Exposure; Population
542.	Swensen, AR, Harnack, LJ, Ross, JA. Nutritional assessment of pregnant women enrolled in the Special Supplemental Program for Women, Infants, and Children (WIC). J Am Diet Assoc. 2001. 101:903-8. doi:10.1016/s0002-8223(01)00221-8.	Study Design; Outcome
543.	Switkowski, KM, Jacques, PF, Must, A, Hivert, MF, Fleisch, A, Gillman, MW, Rifas-Shiman, S, Oken, E. Higher Maternal Protein Intake during Pregnancy Is Associated with Lower Cord Blood Concentrations of Insulin-like Growth Factor (IGF)-II, IGF Binding Protein 3, and Insulin, but Not IGF-I, in a Cohort of Women with High Protein Intake. J Nutr. 2017. 147:1392-1400. doi:10.3945/jn.117.250589.	Intervention/Exposure; Outcome
544.	Szmeja, MA, Cramp, C, Grivell, RM, Deussen, AR, Yelland, LN, Dodd, JM. Use of a DVD to provide dietary and lifestyle information to pregnant women who are overweight or obese: a nested randomised trial. BMC Pregnancy Childbirth. 2014. 14:409. doi:10.1186/s12884-014-0409-8.	Intervention/Exposure; Outcome
545.	Tadayon, M, Khavayet, F, Abedi, P, Malehi, AS. The relationship between maternal lifestyle and children's body mass index: A cross-sectional study in Abadan, Iran. Journal of Midwifery & Reproductive Health. 2019. 7:1824-1833. doi:10.22038/jmrh.2019.24445.1263.	Study Design; Intervention/Exposure
546.	Tahir, MJ, Haapala, JL, Foster, LP, Duncan, KM, Teague, AM, Kharbanda, EO, McGovern, PM, Whitaker, KM, Rasmussen, KM, Fields, DA, Jacobs, DR, Jr, Harnack, LJ, Demerath, EW. Higher Maternal Diet Quality during Pregnancy and Lactation Is Associated with Lower Infant Weight-For-Length, Body Fat Percent, and Fat Mass in Early Postnatal Life. Nutrients. 2019. 11. doi:10.3390/nu11030632.	Study Design

	Citation	Rationale
547.	Talai Rad, N, Ritterath, C, Siegmund, T, Wascher, C, Siebert, G, Henrich, W, Buhling, KJ. Longitudinal analysis of changes in energy intake and macronutrient composition during pregnancy and 6 weeks post-partum. Arch Gynecol Obstet. 2011. 283:185-90. doi:10.1007/s00404-009-1328-1.	Outcome; Comparator
548.	Tavares, MP, Devincenzi, MU, Sachs, A, de Vilhena Abrão, ACF. Nutritional status and diet quality of nursing mothers on exclusive breastfeeding. Acta Paulista de Enfermagem. 2013. 26:294-298.	Study Design; Outcome
549.	Taveras, E, Blackburn, K, Gillman, M, Haines, J, McDonald, J, Price, S, Oken, E. First Steps for Mommy and Me: A Pilot Intervention to Improve Nutrition and Physical Activity Behaviors of Postpartum Mothers and Their Infants. Maternal & Child Health Journal. 2011. 15:1217-1227. doi:10.1007/s10995-010-0696-2.	Intervention/Exposure; Outcome
550.	Teixeira, VH, Moreira, P. Maternal food intake and socioeconomic status to tackle childhood malnutrition. Jornal de Pediatria. 2016. 92:546-548. doi:10.1016/j.jped.2016.08.002.	Editorial
551.	Thomas Berube, L, Messito, MJ, Woolf, K, Deierlein, A, Gross, R. Correlates of Prenatal Diet Quality in Low-Income Hispanic Women. J Acad Nutr Diet. 2019. doi:10.1016/j.jand.2019.02.004.	Study Design; Outcome
552.	Thomson, JL, Tussing-Humphreys, LM, Goodman, MH, Olender, S. Baseline Demographic, Anthropometric, Psychosocial, and Behavioral Characteristics of Rural, Southern Women in Early Pregnancy. Matern Child Health J. 2016. 20:1980-8. doi:10.1007/s10995-016-2016-y.	Study Design
553.	Thomson, JL, Tussing-Humphreys, LM, Goodman, MH, Olender, SE. Gestational Weight Gain: Results from the Delta Healthy Sprouts Comparative Impact Trial. J Pregnancy. 2016. 2016:5703607. doi:10.1155/2016/5703607.	Intervention/Exposure
554.	Thomson, JL, Tussing-Humphreys, LM, Goodman, MH. Delta Healthy Sprouts: a randomized comparative effectiveness trial to promote maternal weight control and reduce childhood obesity in the Mississippi Delta. Contemp Clin Trials. 2014. 38:82-91. doi:10.1016/j.cct.2014.03.004.	Study Design; No Results
555.	Tian, HM, Wu, YX, Lin, YQ, Chen, XY, Yu, M, Lu, T, Xie, L. Dietary patterns affect maternal macronutrient intake levels and the fatty acid profile of breast milk in lactating Chinese mothers. Nutrition. 2019. 58:83-88. doi:10.1016/j.nut.2018.06.009.	Study Design
556.	Tielemans, MJ, Erler, NS, Franco, OH, Jaddoe, VWV, Steegers, EAP, Kiefte-de jong, JC. Dietary acid load and blood pressure development in pregnancy: The Generation R Study. Clinical Nutrition. 2018. 37:597-603. doi:10.1016/j.clnu.2017.01.013.	Outcome; Association btw DP and GWG not analyzed

	Citation	Rationale
557.	Timmermans, S, Steegers-Theunissen, RP, Vujkovic, M, den Breeijen, H, Russcher, H, Lindemans, J, Mackenbach, J, Hofman, A, Lesaffre, EE, Jaddoe, VV, Steegers, EA. The Mediterranean diet and fetal size parameters: the Generation R Study. Br J Nutr. 2012. 108:1399-409. doi:10.1017/s000711451100691x.	Outcome
558.	Tobias, DK, Hu, FB, Chavarro, J, Rosner, B, Mozaffarian, D, Zhang, C. Healthful dietary patterns and type 2 diabetes mellitus risk among women with a history of gestational diabetes mellitus. Arch Intern Med. 2012. 172:1566-72. doi:10.1001/archinternmed.2012.3747.	Population; Outcome
559.	Torjusen, H, Brantsaeter, AL, Haugen, M, Lieblein, G, Stigum, H, Roos, G, Holmboe-Ottesen, G, Meltzer, HM. Characteristics associated with organic food consumption during pregnancy; data from a large cohort of pregnant women in Norway. BMC Public Health. 2010. 10:775. doi:10.1186/1471-2458-10-775.	Outcome
560.	Tovar, A, Guthrie, LB, Platek, D, Stuebe, A, Herring, SJ, Oken, E. Modifiable predictors associated with having a gestational weight gain goal. Matern Child Health J. 2011. 15:1119-26. doi:10.1007/s10995-010-0659-7.	Intervention/Exposure; Outcome
561.	Tovar, A, Kaar, JL, McCurdy, K, Field, AE, Dabelea, D, Vadiveloo, M. Maternal vegetable intake during and after pregnancy. BMC Pregnancy Childbirth. 2019. 19:267. doi:10.1186/s12884-019-2353-0.	Intervention/Exposure; Outcome
562.	Tovar, A, Must, A, Bermudez, OI, Hyatt, RR, Chasan-Taber, L. The impact of gestational weight gain and diet on abnormal glucose tolerance during pregnancy in Hispanic women. Matern Child Health J. 2009. 13:520-30. doi:10.1007/s10995-008-0381-x.	Intervention/Exposure
563.	Trak-Fellermeier, MA, Campos, M, Melendez, M, Pomeroy, J, Palacios, C, Rivera-Vinas, J, Mendez, K, Febo, I, Willett, W, Gillman, MW, Franks, PW, Joshipura, K. PEARLS randomized lifestyle trial in pregnant Hispanic women with overweight/obesity: gestational weight gain and offspring birthweight. Diabetes Metab Syndr Obes. 2019. 12:225-238. doi:10.2147/dmso.S179009.	Intervention/Exposure
564.	Trude, A, Black, M, Hurley, K, Ojeda, LC, Wang, Y. Maternal Anxiety Symptoms and Mother-toddler Diet Quality Among WIC Participants (OR03-08-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.OR03-08-19.	Abstract
565.	Tryggvadottir, EA, Medek, H, Birgisdottir, BE, Geirsson, RT, Gunnarsdottir, I. Association between healthy maternal dietary pattern and risk for gestational diabetes mellitus. Eur J Clin Nutr. 2016. 70:237-42. doi:10.1038/ejcn.2015.145.	Outcome
566.	Turner, RE, Langkamp-Henken, B, Littell, RC, Lukowski, MJ, Suarez, MF. Comparing nutrient intake from food to the estimated average requirements shows middle- to upper-income pregnant women lack iron and possibly magnesium. Journal of the American Dietetic Association. 2003. 103:461-466.	Intervention/Exposure

	Citation	Rationale
567.	Tussing-Humphreys, LM, Thomson, JL, Goodman, MH, Olender, S. Maternal diet quality and nutrient intake in the gestational period: results from the delta healthy sprouts comparative impact trial. Matern Health Neonatol Perinatol. 2016. 2:8. doi:10.1186/s40748-016-0036-7.	Outcome
568.	Uusitalo, U, Arkkola, T, Ovaskainen, ML, Kronberg-Kippila, C, Kenward, MG, Veijola, R, Simell, O, Knip, M, Virtanen, SM. Unhealthy dietary patterns are associated with weight gain during pregnancy among Finnish women. Public Health Nutr. 2009. 12:2392-9. doi:10.1017/s136898000900528x.	Study Design; Diet assessed at same time as GWG
569.	Vahamiko, S, Isolauri, E, Laitinen, K. Weight status and dietary intake determine serum leptin concentrations in pregnant and lactating women and their infants. Br J Nutr. 2013. 110:1098-106. doi:10.1017/s0007114513000214.	Intervention/Exposure
570.	Vahamiko, S, Isolauri, E, Pesonen, U, Koskinen, P, Ekblad, U, Laitinen, K. Dietary sucrose intake is related to serum leptin concentration in overweight pregnant women. Eur J Nutr. 2010. 49:83-90. doi:10.1007/s00394-009-0052-8.	Intervention/Exposure
571.	Valkama, A, Koivusalo, S, Lindstrom, J, Meinila, J, Kautiainen, H, Stach-Lempinen, B, Rono, K, Klemetti, M, Poyhonen-Alho, M, Tiitinen, A, Huvinen, E, Laivuori, H, Andersson, S, Roine, R, Eriksson, JG. The effect of dietary counselling on food intakes in pregnant women at risk for gestational diabetes: a secondary analysis of a randomised controlled trial RADIEL. Eur J Clin Nutr. 2016. 70:912-7. doi:10.1038/ejcn.2015.205.	Intervention/Exposure; Outcome
572.	Valkama, AJ, Meinila, JM, Koivusalo, SB, Lindstrom, J, Rono, K, Stach-Lempinen, B, Eriksson, JG. Diet quality as assessed by the Healthy Food Intake Index and relationship with serum lipoprotein particles and serum fatty acids in pregnant women at increased risk for gestational diabetes. Br J Nutr. 2018. 120:914-924. doi:10.1017/s0007114518002404.	Outcome
573.	van der Wijden, CL, Steinbach, S, van der Ploeg, HP, van Mechelen, W, van Poppel, MN. A longitudinal study on the relationship between eating style and gestational weight gain. Appetite. 2014. 83:304-8. doi:10.1016/j.appet.2014.09.001.	Intervention/Exposure
574.	van Elten, TM, Karsten, MDA, Geelen, A, Gemke, Rjbj, Groen, H, Hoek, A, van Poppel, MNM, Roseboom, TJ. Preconception lifestyle intervention reduces long term energy intake in women with obesity and infertility: a randomised controlled trial. Int J Behav Nutr Phys Act. 2019. 16:3. doi:10.1186/s12966-018-0761-6.	Intervention/Exposure; Population
575.	van Poppel, MNM, Jelsma, JGM, Simmons, D, Devlieger, R, Jans, G, Galjaard, S, Corcoy, R, Adelantado, JM, Dunne, F, Harreiter, J, Kautzky-Willer, A, Damm, P, Mathiesen, ER, Jensen, DM, Andersen, LL, Tanvig, M, Lapolla, A, Dalfra, MG, Bertolotto, A, Wender-Ozegowska, E, Zawiejska, A, Hill, D, Desoye, G, Snoek F J. Mediators of lifestyle behaviour changes in obese pregnant women. Secondary analyses from the DALI lifestyle randomised controlled trial. Nutrients. 2019. 11. doi:10.3390/nu11020311.	Outcome

	Citation	Rationale
576.	Vander Wyst, KB, Vercelli, ME, O'Brien, KO, Cooper, EM, Pressman, EK, Whisner, CM. A social media intervention to improve nutrition knowledge and behaviors of low income, pregnant adolescents and adult women. PLoS One. 2019. 14:e0223120. doi:10.1371/journal.pone.0223120.	Comparator
577.	Vandyousefi, S, Whaley, S, Asigbee, F, Landry, M, Ghaddar, R, Davis, J. Association of Breastfeeding and Sugar-Sweetened Beverage Consumption with Obesity Prevalence in Offspring Born to Mothers with and Without Gestational Diabetes Mellitus (P11-098-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.P11-098-19.	Abstract
578.	Vega-Lopez, S, Pignotti, GA, Todd, M, Keller, C. Egg Intake and Dietary Quality among Overweight and Obese Mexican-American Postpartum Women. Nutrients. 2015. 7:8402-12. doi:10.3390/nu7105402.	Outcome
579.	Ventegodt, S, Flensborg-Madsen, T, Andersen, NJ, Merrick, J. Which factors determine our quality of life, health and ability? Results from a Danish population sample and the Copenhagen Perinatal Cohort. Journal of the College of Physicians and Surgeons Pakistan. 2008. 18:445-450. doi:10.1017/BJN20061929.	Study Design; Outcome
580.	Vesco, K, Leo, M, Gillman, M, King, J, McEvoy, C, Karanjaa, N, Perrin, N, Eckhardt, C, Smith, KS, Stevens, V. Impact of a weight management intervention on pregnancy outcomes among obese women: the Healthy Moms Trial. American journal of obstetrics and gynecology. 2013. 208:S352. doi:10.1016/j.ajog.2012.12.009.	Abstract
581.	Vesco, KK, Karanja, N, King, JC, Gillman, MW, Leo, MC, Perrin, N, McEvoy, CT, Eckhardt, CL, Smith, KS, Stevens, VJ. Efficacy of a group-based dietary intervention for limiting gestational weight gain among obese women: a randomized trial. Obesity (Silver Spring). 2014. 22:1989-96. doi:10.1002/oby.20831.	Intervention/Exposure
582.	Vieten, C, Laraia, BA, Kristeller, J, Adler, N, Coleman-Phox, K, Bush, NR, Wahbeh, H, Duncan, LG, Epel, E. The mindful moms training: development of a mindfulness-based intervention to reduce stress and overeating during pregnancy. BMC Pregnancy Childbirth. 2018. 18:201. doi:10.1186/s12884-018-1757-6.	Intervention/Exposure; Outcome
583.	Vilela, AA, Pinto Tde, J, Rebelo, F, Benaim, C, Lepsch, J, Dias-Silva, CH, Castro, MB, Kac, G. Association of Prepregnancy Dietary Patterns and Anxiety Symptoms from Midpregnancy to Early Postpartum in a Prospective Cohort of Brazilian Women. J Acad Nutr Diet. 2015. 115:1626-35. doi:10.1016/j.jand.2015.01.007.	Outcome
584.	Villar-Vidal, M, Amiano, P, Rodriguez-Bernal, C, Santa Marina, L, Mozo, I, Vioque, J, Navarrete-Munoz, EM, Romaguera, D, Valvi, D, Fernandez Samoano, A, Tardon, A, Ibarluzea, J. Compliance of nutritional recommendations of Spanish pregnant women according to sociodemographic and lifestyle characteristics: a cohort study. Nutr Hosp. 2015. 31:1803-12. doi:10.3305/nh.2015.31.4.8293.	Study Design

	Citation	Rationale
585.	Vinter, CA, Jensen, DM, Ovesen, P, Beck-Nielsen, H, Tanvig, M, Lamont, RF, Jorgensen, JS. Postpartum weight retention and breastfeeding among obese women from the randomized controlled Lifestyle in Pregnancy (LiP) trial. Acta Obstet Gynecol Scand. 2014. 93:794-801. doi:10.1111/aogs.12429.	Intervention/Exposure
586.	Vinter, CA, Jørgensen, JS, Ovesen, P, Beck-Nielsen, H, Skytthe, A, Jensen, DM. Metabolic effects of lifestyle intervention in obese pregnant women. Results from the randomized controlled trial 'Lifestyle in Pregnancy' (LiP). Diabetic Medicine. 2014. 31:1323-1330. doi:10.1111/dme.12548.	Intervention/Exposure
587.	Vlaardingerbroek, H, Roelants, JA, Rook, D, Dorst, K, Schierbeek, H, Vermes, A, Vermeulen, MJ, van Goudoever, JB, van den Akker, CH. Adaptive regulation of amino acid metabolism on early parenteral lipid and high-dose amino acid administration in VLBW infants - a randomized, controlled trial. Clin Nutr. 2014. 33:982-90. doi:10.1016/j.clnu.2014.01.002.	Intervention/Exposure
588.	von Ruesten, A, Brantsaeter, AL, Haugen, M, Meltzer, HM, Mehlig, K, Winkvist, A, Lissner, L. Adherence of pregnant women to Nordic dietary guidelines in relation to postpartum weight retention: results from the Norwegian Mother and Child Cohort Study. BMC Public Health. 2014. 14:75. doi:10.1186/1471-2458-14-75.	Population
589.	Wadhwa, EL, Ma, C, Shaw, GM, Carmichael, SL. Gastroschisis and maternal intake of phytoestrogens. Am J Med Genet A. 2016. 170:2078-82. doi:10.1002/ajmg.a.37659.	Study Design; Intervention/Exposure
590.	Walker, LO, Kang, S, Sterling B S. Weight-Loss Resilience Among Low-Income Postpartum Women: Association With Health Habits. West J Nurs Res. 2019. :193945918824598. doi:10.1177/0193945918824598.	Intervention/Exposure
591.	Wall, CR, Gammon, CS, Bandara, DK, Grant, CC, Atatoa Carr, PE, Morton, SM. Dietary Patterns in Pregnancy in New Zealand-Influence of Maternal Socio-Demographic, Health and Lifestyle Factors. Nutrients. 2016. 8. doi:10.3390/nu8050300.	Outcome
592.	Walsh, J, Mahony, R, Foley, M, Mc Auliffe, F. A randomised control trial of low glycaemic index carbohydrate diet versus no dietary intervention in the prevention of recurrence of macrosomia. BMC Pregnancy Childbirth. 2010. 10:16. doi:10.1186/1471-2393-10-16.	Study Design; Study protocol
593.	Walsh, J, McGowan, C, Byrne, J, Foley, M, Mahony, R, McAuliffe, F. The influence of a low glycaemic index dietary intervention on maternal glycaemic index, dietary intake and gestational weight gain. American journal of obstetrics and gynecology. 2013. 208:S33. doi:10.1016/j.ajog.2012.10.228.	Abstract
594.	Walsh, JM, Mahony, RM, Canty, G, Foley, ME, McAuliffe, FM. Identification of those most likely to benefit from a low-glycaemic index dietary intervention in pregnancy. Br J Nutr. 2014. 112:583-9. doi:10.1017/s000711451400110x.	Intervention/Exposure

	Citation	Rationale
595.	Walsh, JM, Mahony, RM, Culliton, M, Foley, ME, McAuliffe, FM. Impact of a low glycemic index diet in pregnancy on markers of maternal and fetal metabolism and inflammation. Reprod Sci. 2014. 21:1378-81. doi:10.1177/1933719114525275.	Outcome
596.	Walsh, JM, McGowan, CA, Mahony, R, Foley, ME, McAuliffe, FM. Low glycaemic index diet in pregnancy to prevent macrosomia (ROLO study): randomised control trial. Bmj. 2012. 345:e5605. doi:10.1136/bmj.e5605.	Intervention/Exposure
597.	Wand, H, Ramjee, G. High prevalence of obesity among women who enrolled in HIV prevention trials in KwaZulu-Natal, South Africa: healthy diet and life style messages should be integrated into HIV prevention programs. BMC Public Health. 2013. 13:159-159. doi:10.1186/1471-2458-13-159.	Population; Country
598.	Wang, C, Gao, J, Liu, N, Yu, S, Qiu, L, Wang, D. Maternal factors associated with neonatal vitamin D deficiency. J Pediatr Endocrinol Metab. 2019. 32:167-172. doi:10.1515/jpem-2018-0422.	Outcome
599.	Wang, L, Liu, H, Zhang, S, Leng, J, Liu, G, Zhang, C, Li, WQ, Li, N, Li, W, Li, Y, Sun, S, Yu, Z, Yang, X, Hu, G. Obesity index and the risk of diabetes among Chinese women with prior gestational diabetes. Diabetic Medicine. 2014. 31:1368-1377. doi:10.1111/dme.12532.	Study Design; Population
600.	Wang, L, Dalton, WT, 3rd, Schetzina, KE, Fulton-Robinson, H, Holt, N, Ho, A, Tudiver, F, Wu, T. Home food environment, dietary intake, and weight among overweight and obese children in Southern Appalachia. Southern Medical Journal. 2013. 106:550-557. doi:10.1097/SMJ.0000000000000008.	Population; Outcome
601.	Wansink, B. Project M.O.M.: Mothers & Others & MyPyramid. J Am Diet Assoc. 2008. 108:1302-4. doi:10.1016/j.jada.2008.06.444.	Study Design; Commentary
602.	Watson, PE, McDonald, BW. Major influences on nutrient intake in pregnant New Zealand women. Maternal & Child Health Journal. 2009. 13:695-706. doi:10.1007/s10995-008-0405-6.	Intervention/Exposure; Outcome
603.	Watson, PE, McDonald, BW. Seasonal variation of nutrient intake in pregnancy: effects on infant measures and possible influence on diseases related to season of birth. Eur J Clin Nutr. 2007. 61:1271-80. doi:10.1038/sj.ejcn.1602644.	Outcome
604.	Watson, PE, McDonald, BW. The association of maternal diet and dietary supplement intake in pregnant New Zealand women with infant birthweight. Eur J Clin Nutr. 2010. 64:184-93. doi:10.1038/ejcn.2009.134.	Intervention/Exposure; Comparator
605.	Wen, LM, Flood, VM, Simpson, JM, Rissel, C, Baur, LA. Dietary behaviours during pregnancy: findings from first-time mothers in southwest Sydney, Australia. International Journal of Behavioral Nutrition & Physical Activity. 2010. 7:7p-7p. doi:10.1186/1479-5868-7-13.	Study Design; Outcome

	Citation	Rationale
606.	Wen, LM, Simpson, JM, Rissel, C, Baur, LA. Maternal "junk food" diet during pregnancy as a predictor of high birthweight: findings from the healthy beginnings trial. Birth. 2013. 40:46-51. doi:10.1111/birt.12028.	Outcome
607.	Whisner, CM, Young, BE, Pressman, EK, Queenan, RA, Cooper, EM, O'Brien, KO. Maternal diet but not gestational weight gain predicts central adiposity accretion in utero among pregnant adolescents. Int J Obes (Lond). 2015. 39:565-70. doi:10.1038/ijo.2014.202.	Outcome; Comparator
608.	White, SL, Flynn, AC, Poston, L. Impact of a positive or negative diagnosis of gestational diabetes and treatment, on weight change and dietary behaviour in an obese cohort: secondary analysis of the UK pregnancies better eating and activity trial (UPBEAT) randomised controlled trial (RCT). Diabetic medicine. 2019. 36:65-. doi:10.1111/dme.13883.	Abstract
609.	Wilkinson, SA, McIntyre, HD. Evaluation of the 'healthy start to pregnancy' early antenatal health promotion workshop: a randomized controlled trial. BMC Pregnancy Childbirth. 2012. 12:131. doi:10.1186/1471-2393-12-131.	Outcome
610.	Wilkinson, SA, van der Pligt, P, Gibbons, KS, McIntyre, HD. Trial for Reducing Weight Retention in New Mums: a randomised controlled trial evaluating a low intensity, postpartum weight management programme. J Hum Nutr Diet. 2015. 28 Suppl 1:15-28. doi:10.1111/jhn.12193.	Intervention/Exposure; Comparator
611.	Willcox, JC, Wilkinson, SA, Lappas, M, Ball, K, Crawford, D, McCarthy, EA, Fjeldsoe, B, Whittaker, R, Maddison, R, Campbell, KJ. A mobile health intervention promoting healthy gestational weight gain for women entering pregnancy at a high body mass index: the txt4two pilot randomised controlled trial. Bjog. 2017. 124:1718-1728. doi:10.1111/1471-0528.14552.	Intervention/Exposure
612.	Williams, JE, Carrothers, JM, Lackey, KA, Beatty, NF, York, MA, Brooker, SL, Shafii, B, Price, WJ, Settles, ML, McGuire, MA, McGuire, MK. Human Milk Microbial Community Structure Is Relatively Stable and Related to Variations in Macronutrient and Micronutrient Intakes in Healthy Lactating Women. J Nutr. 2017. 147:1739-1748. doi:10.3945/jn.117.248864.	Intervention/Exposure; Outcome
613.	Wiltheiss, GA, Lovelady, CA, West, DG, Brouwer, RJ, Krause, KM, Ostbye, T. Diet quality and weight change among overweight and obese postpartum women enrolled in a behavioral intervention program. J Acad Nutr Diet. 2013. 113:54-62. doi:10.1016/j.jand.2012.08.012.	Population
614.	Winkvist, A, Bertz, F, Ellegard, L, Bosaeus, I, Brekke, HK. Metabolic risk profile among overweight and obese lactating women in Sweden. PLoS One. 2013. 8:e63629. doi:10.1371/journal.pone.0063629.	Intervention/Exposure; Outcome
615.	Worawong, C. A nutrition intervention focused on goals of Thai pregnant women. 2008. :221 p-221 p.	Dissertation

	Citation	Rationale
616.	Wyst, KV, Buman, M, Shaibi, G, Petrov, M, Reifsnider, E, Whisner, C. Evaluation of Variability in Resting Energy Expenditure and Its Relationship with Macronutrients and Gestational Weight Gain During the Second Trimester of Pregnancy (P11-136-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.P11-136-19.	Abstract
617.	Xu, Q, Gao, ZY, Li, LM, Wang, L, Zhang, Q, Teng, Y, Zhao, X, Ge, S, Jing, HJ, Yang, YT, Liu, XJ, Lyu, CJ, Mao, L, Yu, XM, Liu, YH, Kong, AJ, Yang, XY, Liu, Z, Zhang, Y, Wang, J, Zhang, XS, Xue, CY, Lu, YP. The Association of Maternal Body Composition and Dietary Intake with the Risk of Gestational Diabetes Mellitus during the Second Trimester in a Cohort of Chinese Pregnant Women. Biomed Environ Sci. 2016. 29:1-11. doi:10.3967/bes2016.001.	Intervention/Exposure; Outcome
618.	Xuto, Piyanut, Sinsuksai, Nittaya, Piaseu, Noppawan, Nityasuddhi, Dechavush, Phupong, Vorapong. A Causal Model of Postpartum Weight Retention among Thais. Pacific Rim International Journal of Nursing Research. 2012. 16:48-63.	Intervention/Exposure
619.	Yao, J, Cong, L, Zhu, B, Wang, T. Effect of dietary approaches to stop hypertension diet plan on pregnancy outcome patients with gestational diabetes mellitus. Bangladesh Journal of Pharmacology. 2015. 10:732-738. doi:10.3329/bjp.v10i4.23813.	Health Status
620.	Yin, J, Quinn, S, Dwyer, T, Ponsonby, AL, Jones, G. Maternal diet, breastfeeding and adolescent body composition: a 16-year prospective study. Eur J Clin Nutr. 2012. 66:1329-34. doi:10.1038/ejcn.2012.122.	Outcome
621.	Yisahak, S, Hinkle, S, Mumford, S, Li, M, Andriessen, V, Grantz, K, Zhang, C, Grewal, J. Association of Maternal Vegetarian Diets with Neonatal Anthropometry in the NICHD Fetal Growth Study (OR35-08-19). Curr Dev Nutr. 2019. 3. doi:10.1093/cdn/nzz048.OR35-08-19.	Abstract
622.	Yong, HY, Shariff, ZM, Mohd Yusof, BN, Rejali, Z, Bindels, J, Tee, YYS, van der Beek, EM. Associations between the dietary patterns of pregnant Malaysian women and ethnicity, education, and early pregnancy waist circumference: A prospective cohort study. Nutr Res Pract. 2019. 13:230-239. doi:10.4162/nrp.2019.13.3.230.	Outcome
623.	Yusuf, H, Subih, HS, Obeidat, BS, Sharkas, G. Associations of macro and micronutrients and antioxidants intakes with preeclampsia: A case-control study in Jordanian pregnant women. Nutr Metab Cardiovasc Dis. 2019. 29:458-466. doi:10.1016/j.numecd.2019.01.008.	Study Design
624.	Zambrano, E, Nathanielsz, PW. Relative contributions of maternal Western-type high fat, high sugar diets and maternal obesity to altered metabolic function in pregnancy. Journal of Physiology. 2017. 595:4573-4574. doi:10.1113/JP274392.	Study Design
625.	Zareei, S, Homayounfar, R, Naghizadeh, MM, Ehrampoush, E, Rahimi, M. Dietary pattern in pregnancy and risk of gestational diabetes mellitus (GDM). Diabetes Metab Syndr. 2018. 12:399-404. doi:10.1016/j.dsx.2018.03.004.	Study Design; Outcome

	Citation	Rationale
626.	Zeng, L, Yan, H, Cheng, Y, Dibley, MJ. Modifying effects of wealth on the response to nutrient supplementation in pregnancy on birth weight, duration of gestation, and perinatal mortality in rural western china: double-blind cluster randomized controlled trial. Obstetrical & gynecological survey. 2011. 66:477-478. doi:10.1097/OGX.0b013e31823520d5.	Editorial comment
627.	Zhang, C, Liu, S, Solomon, CG, Hu, FB. Dietary fiber intake, dietary glycemic load, and the risk for gestational diabetes mellitus. Diabetes Care. 2006. 29:2223-2230.	Intervention/Exposure; Outcome
628.	Zhang, C, Schulze, MB, Solomon, CG, Hu, FB. A prospective study of dietary patterns, meat intake and the risk of gestational diabetes mellitus. Diabetologia. 2006. 49:2604-13. doi:10.1007/s00125-006-0422-1.	Outcome
629.	Zhang, C, Tobias, DK, Chavarro, JE, Bao, W, Wang, D, Ley, SH, Hu, FB. Adherence to healthy lifestyle and risk of gestational diabetes mellitus: prospective cohort study. Bmj. 2014. 349:g5450. doi:10.1136/bmj.g5450.	Outcome
630.	Zielinska, MA, Hamulka, J, Wesolowska, A. Carotenoid Content in Breastmilk in the 3rd and 6th Month of Lactation and Its Associations with Maternal Dietary Intake and Anthropometric Characteristics. Nutrients. 2019. 11. doi:10.3390/nu11010193.	Intervention/Exposure; Population
631.	Zulyniak, MA, de Souza, RJ, Shaikh, M, Desai, D, Lefebvre, DL, Gupta, M, Wilson, J, Wahi, G, Subbarao, P, Becker, AB, Mandhane, P, Turvey, SE, Beyene, J, Atkinson, S, Morrison, KM, McDonald, S, Teo, KK, Sears, MR, Anand, SS. Does the impact of a plant-based diet during pregnancy on birth weight differ by ethnicity? A dietary pattern analysis from a prospective Canadian birth cohort alliance. BMJ Open. 2017. 7:e017753. doi:10.1136/bmjopen-2017-017753.	Outcome